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ABSTRACT

Recognizing a need for improvement in their vocational education offerings, the administration of the program for the deaf appointed a study team representing backgrounds including education of the deaf, manpower research, public administration, and occupational analysis. This report presents their specific analysis and recommendations for a comprehensive plan for career education which will lead to higher and more diversified employment for the deaf. The plan calls for guidance and exploratory opportunities and puts heavy emphasis on the student's choice of a career field. It integrates "academic" and "vocational" courses and individualizes the program. Reports based on an extensive analysis of both educational opportunities and labor market conditions are included in the report. (GEB)

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CAREER EDUCATION AT O.S.S.D.

**A study of needs and plan of action
for Career Education at
Oregon State School for the Deaf**

**State of Oregon
Special Schools Division
July 1970**

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Career Education at O.S.S.D.

A study of needs and plan of action
for career education at
Oregon State School for the Deaf

Prepared by Bruce McKinlay,
H.W. Barkuloo, Paul Kerr, and
Michael E. Kutter

The study was supported financially by
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State of Oregon
Special Schools Division
July 1970

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Dear Bruce:

On behalf of the Advisory Committee for the Vocational Training Needs Study for the School for the Deaf, I would like to extend our appreciation and thanks. We are especially appreciative of being allowed to offer our thoughts and suggestions during the three meetings while the report was being assembled and written. We feel the report really reflects our collective ideas.

The Advisory Committee had a good mix of deaf graduates from the schools, representatives from state agencies, and private industry employing deaf workers.

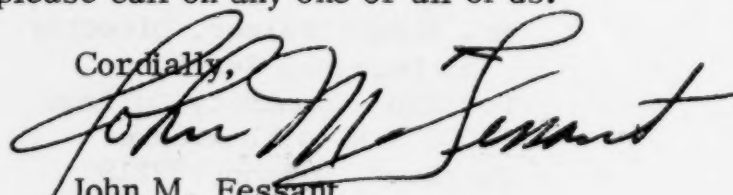
The staff you assembled as a study team was made up of members not only knowledgeable in the area of the deaf, but also experts in their respective fields.

The total report is a document we can all be proud of. I feel we have not only performed a service for all the deaf in Oregon, but also the taxpayers and others with a special interest in this area.

We on the Advisory Committee feel strongly that every effort should be made to implement the recommendations in the report as soon as possible. Realizing this takes financial resources, much of this can take place with the reallocation of present resources and the reemphasis of present programs.

Again the report and total study is an excellent job. If there is any help the committee can give you, please call on any one or all of us.

Cordially,


John M. Fessant
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JMF:de

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Preface

This study was undertaken because the administration of the Special Schools Division and the Oregon State School for the Deaf recognized a need for improvement in their vocational education offerings. The study team which assembled the information, prepared the report, and drafted the recommendations represent a variety of backgrounds including education of the deaf, manpower research, public administration, and occupational analysis. The Advisory Committee comes from similarly diverse backgrounds: education, manpower programs, counseling, personnel administration, social services, and industry. Despite the different perspectives represented, there was an amazing amount of agreement about the direction the report should take.

One of the early decisions facing the study team was whether to recommend sweeping changes or minor adjustments. We found much of real merit in the school; much that justifies the school's reputation as one of the nation's better schools for the deaf. Yet the study team chose to make fairly comprehensive recommendations, because we believe the school is strong enough and progressive enough to be responsive to suggestions for change. The essential ingredients of a truly excellent program are present at O.S.S.D., and we hope that the school will rise to what we sincerely believe to be an opportunity for greatness.

The study team wishes to acknowledge the dedication and long hours which the Advisory Committee devoted to its task. Many significant contributions were made by the deaf members of that committee as exemplified by the written comments prepared by Mr. Kenneth Welch and by Mr. George Scheler. The entire undertaking was greatly facilitated by the helpful attitudes of Mr. Carl Haugerud, Special Schools Administrator, Dr. Marvin Clatterbuck, Deaf School Superintendent, and the staff of the school.

The objective of this project is to produce a comprehensive plan for career education which will lead to higher and more diversified employment for the deaf. Thus, this document emphasizes the plan for career

education at O.S.S.D. The report begins in Part I with a concise summary of findings. That is followed, in Part II, by the plan itself. The plan calls for guidance and exploratory opportunities, and it puts heavy emphasis on the student's choice of a career field. It integrates "academic" and "vocational" courses and individualizes the program. It also provides for follow-through and follow-up. The plan is based on extensive analysis of both educational opportunities and labor market conditions. Reports on these topics are presented in Part III as prepared by the project staff.

It is the sincere hope of the study team that the project will not end with this writing, but will lead to appropriate career preparation for every student at O.S.S.D.

Bruce McKinlay
H.W. Barkuloo
Paul Kerr
Michael Kutter

Part I: Summary of Findings

HIGHLIGHTS

1. Deafness itself is not an extremely limiting handicap occupationally; deaf youngsters have a wide variety of career opportunities open to them, if they learn how to function productively in the work world and if they get appropriate career preparation.
2. O.S.S.D. cannot, with its own facilities, offer programs in all the wide variety of occupations for which deaf students can qualify.
3. There has been much needed growth of post-secondary career education programs for deaf high school graduates, and they offer tremendously varied opportunities for a broad spectrum of deaf students. The educational program at O.S.S.D. should be modified to take maximum advantage of these educational resources.
4. Data concerning recent graduates indicates that they mostly are not able to secure employment in the vocational areas in which they have received training at O.S.S.D.
5. In addition to their hearing loss, O.S.S.D. students suffer socially from the isolation inherent in institutional settings.

6. The low level of success of Gallaudet students indicates the need for greater social development and informed, career-oriented goals among academically talented students as well as among the majority of the student body.
7. The overriding need of all students at O.S.S.D. is for real understanding of their own goals and development of their own social abilities. All students at the school need personal and career guidance services, which are not now available.
8. Every student needs an opportunity to learn about the wide variety of career opportunities through related classroom and out-of-classroom activities such as field trips, work sampling, exploratory work experience, part time and summer jobs, both on and off campus. The Salem community and the service departments of the school offer excellent opportunities for career exploration and social growth.
9. The school needs to develop within its present facilities a few, complete, specialized, job-entry training programs, such as key punch, which will prepare students who, for one reason or another, will not enter post-secondary programs.
10. The overall effect of the recommendations is to:
 - Establish personal and career guidance services linked to an occupational exploratory program.
 - Establish a career education program, utilizing all of the school's resources as well as available community resources.
 - Change the emphasis of the shop courses from a traditional "work" concept to one serving as a laboratory setting supporting classroom and other educational activities in a Career Education program.

The following is a condensation of the major findings of the study. All of the topics covered in this summary are discussed more fully and findings are documented in the "Project Reports," which are reproduced in Part III of this volume.

VOCATIONAL EDUCATION AT O.S.S.D.

The Oregon State School for the Deaf (O.S.S.D.) is a small, residential school serving students from aged 3 years, 8 months to about 22 years from throughout Oregon. The school graduates 15 to 20 students per year from its high school. Despite normal learning ability and other basic aptitudes, the average student reads at the fourth or fifth grade level at graduation. The vast majority of the students are congenitally deaf, and well over a third suffer multiple handicaps, most frequently learning impairment. O.S.S.D. is an efficiently and cleanly run school, but its students suffer from the isolation inherent in institutional settings.

Like most high schools, the educational program is largely oriented to the limited goal of college admission. There are "vocational" courses in painting, woodworking, mechanical drawing, small motor repair, electronics, metals, typing, key punch, business machines, homemaking, and shoe repair, but these offerings consist of isolated courses of varying scope and purpose. There is no systematic vocational counseling except that provided juniors and seniors by a part-time counselor from the Vocational Rehabilitation Division.

The school does not have a consistent philosophy of vocational education, although vocational courses are generally considered to be appropriate for the average and slow learners, not the "college-bound." The vocational courses serve, at best, as a work situation; at worst, they serve simply as a holding operation.

Vocational courses are not presently viewed as part of the broad educational process. In vocational courses there is frequently no homework or related instruction regarding career opportunities. Field trips and related on-the-job instruction are the rare exception. Neither students nor parents nor teachers are involved in the assigning of students to vocational classes, and major schedule changes are made without consultation of student, teacher, or parent.

Somewhat surprisingly, teachers are reasonably well satisfied with their equipment and their professional status in the school. (See project report by H.W. Barkuloo, "Vocational Department, Oregon State School for the Deaf.")

GRADUATES OF O.S.S.D.

Graduates of O.S.S.D. do not fare well in college. Historically, about a third have enrolled in college (mostly Gallaudet College, a liberal arts school for the deaf in Washington, D.C.), but only about a third of those who enroll actually complete their college programs. The recent addition of programs for the deaf at five other institutions, including Seattle Community College, has increased the percentage of graduates who enroll in college, but it remains to be seen whether their success will be greater. (See project report by Carl Haugerud, "Summary Regarding Post High School Education of the Deaf.")

Most of the vocational courses at the school do not lead to related employment for graduates. Two-thirds of O.S.S.D. graduates enter the labor force directly after high school, and they find employment in a variety of occupations. However, with the exception of key punch operator, where the school has had a high degree of success in placing graduates, the jobs graduates get are not directly related to vocational courses taken at the school. (See project report by Michael E. Kutter, "A Review of Employment Success of Recent Graduates of the Oregon State School for the Deaf.")

EMPLOYMENT OPPORTUNITIES FOR DEAF PERSONS

The diversity of employment of recent graduates of O.S.S.D. is typical of deaf persons. There are many and diverse occupational opportunities in Oregon open to deaf persons, and deaf adults are working in a wide variety of occupational areas. Occupational areas in which deaf persons are working, or in which deafness would not be a serious handicap are as follows:

General Clerical	Food Service
Bookkeeping-Accounting (Including Data Processing)	Home Economics and Personal Services
Timber Products	Education & Social Services
Metal Working	Mechanical & Repair
Electrical-Electronics	Graphic Arts
Manual & Manipulative	Building & Grounds Maintenance

Inspecting, Checking, & Testing
Machine Tending

Laboratory Science
Engineering & Design

(See project report by Paul Kerr, "Employment Opportunities for the Deaf.")

The failure of deaf persons to progress to their fullest potential occupationally is not attributable to their physical impairment alone. Perhaps more to blame are: underestimation by employers of deaf persons' abilities, ignorance among deaf persons as to the full range of opportunities open to them, retarded social development, and lack of career preparation. Deafness itself is not an extremely limiting handicap occupationally; deaf youngsters have a wide variety of career opportunities open to them, if they learn how to function productively in the work world, and if they get appropriate career preparation.

CAREER PREPARATION OPPORTUNITIES

The small size of O.S.S.D. effectively precludes wide variety in vocational offerings of the traditional sort, where students learn knowledges and skills for specific occupations in classroom and laboratory settings. The small size and low pupil-to-teacher ratio at O.S.S.D., however, makes individualized programs highly feasible.

Opportunities exist for greater contact with the careers in the Salem community. The O.S.S.D. campus itself, with its many and varied service units (e.g., office, physical plant, dormitories, etc.) provides an ideal resource for occupational exploration and some skill training.

There are an increasing number of post-high school career education opportunities open to deaf high school graduates, both in special programs for the deaf and in regular community college programs. A sound career choice, involving understanding of self and knowledge of the field of work, as well as adequate educational preparation are essential pre-requisites for success in these programs, just as they are essential for employment success.

Part II: Plan for Career Education at O.S.S.D.

INTRODUCTION

It is the purpose of the materials that follow to provide data, educational philosophy, guidelines and recommendations which will assist the staff of O.S.S.D. in implementing educational improvements for the students in the school.

In making these recommendations, the study team recognizes that (1) within a given school setting, the reorganization of one segment of the school is not an isolated incident and that the recommendations will affect every department within the school, (2) implementation of the recommendations will take time, and (3) that detailed planning is required on the part of the staff in order to insure success. Accordingly the recommendations have been put into two categories: immediate (one to three years) and long range (three to seven years).

The overall effect of the recommendations is to change the emphasis of the shop courses from a traditional "work" concept to one of serving as a laboratory setting supporting classroom and other education activities in a Career Education program. A second effect of the recommendations is to establish career education programs utilizing all of the school's resources as well as available community resources for deaf students. A third effect of the recommendations is for the school to develop, within its present facilities, a few, complete, specialized job-entry training programs such as key punch, which will be available to students who do not choose to enter post-secondary programs.

The basic rationale for these recommendations is based on the following:

1. The growth of post-secondary institutions for deaf persons offers tremendously varied opportunities for a broad spectrum of deaf students. The school cannot, with its own facilities, offer programs in all the wide variety of oc-

cupations for which deaf students can qualify. Yet all students should have the career information and related exploratory shop and industry experience which will allow them to make the crucial decision as to what educational course to follow.

While this is important at present, it will become even more important as Gallaudet College and the National Technical Institute for the Deaf expand their programs for language competent deaf students and as the three vocational-technical colleges (Seattle, New Orleans, St. Paul) are able, through experience, to lower educational acceptance requirements.

2. Data concerning recent graduates indicates that they are not able to secure employment in the vocational areas in which they have secured training at O.S.S.D.
3. The low level of success of Gallaudet students indicates the need for informed career-oriented goals.

It should be stressed that, with the exception of employment training programs for students who cannot benefit from post-secondary education, the recommendations are designed to put emphasis on career education, counseling, and informed decision making. The proposed program of career education is designed to enhance, not detract, from the preparation of all qualified students for appropriate post-secondary programs.

It was pointed out in the preceding section that there is no consistent philosophy of vocational education at O.S.S.D. The lack of any school-wide, or even department-wide philosophy of vocational education is a serious impediment to the development of a comprehensive career education program. Without some fundamental agreement on the importance of vocational education in the school program, vocational offerings prove to be fragmentary and of inconsistent purpose and quality.

Recommendation: The school staff and administration should at the earliest possible date set aside time for workshops on a philosophy of career education for the school. Study Team members have volunteered to make themselves available for participation in such workshops.

Whatever the final focus of the vocational department, and for that matter, the entire school, it must be the result of in-depth discussion by all concerned members of the teaching staff, administration, and dormitory personnel. Successful programs result not only from

superior leadership, but from total staff involvement and decision making.

Lacking a school philosophy of career education upon which to build recommendations, the study team was compelled to use its own. The study team is of the opinion that anyone making recommendations should clearly state his basic philosophy as well as his research findings.

The following section will review the study team's ideas concerning the following: Philosophy of Vocational Education, The Role of College, Academic vs. Vocational Education, The Cluster Approach to Education, and Teaching Methods.

That discussion is followed by the plan for career education at O.S.S.D. It contains recommendations regarding career guidance, recommendations regarding occupational exploration, recommendations regarding career preparation, as well as a discussion of resources for developing and operating a career education program.

PHILOSOPHY OF VOCATIONAL EDUCATION UNDERLYING RECOMMENDATIONS

Career choice and preparation is one of the very most important activities of adolescence and young adulthood. Career planning ranks along with the development of communication skills, ability to assess one's environment, interpersonal relationships, and social responsibilities as a major goal of education. The result of career choice and preparation will likely have as great an impact on the life of the adult person as any other developmental activity. Because of its importance, and because of declining opportunities for casual learning about the world of work, career guidance and education should have a high place in schools' lists of instructional priorities. This is especially true of a residential school such as O.S.S.D. where students miss many of the contacts with the world of work which accrue to students living in families.

Because career choice is a developmental process, involving fantasy, exploratory, reality, and other phases, programs of career choice and preparation must be sustained efforts, beginning in the primary grades and extending over a number of years; brief courses or course

units are not sufficient. Their effectiveness also requires an emotionally healthy and socially maturing student. The importance of social development to career choice and preparation can hardly be over-emphasized. To be successful, career education must increasingly reflect the students' own emerging goals, not teachers' goals.

The term "career education" is used intentionally to indicate a departure from the traditional "vocational education" shop courses. Career education means an integrated educational program, not just an occasional course, covering all essential conceptual, factual, social, and manipulative skills and knowledge, not just rudimentary manual skills. It also means education which provides sources of continuity when tentative vocational attempts turn to defeats after high school.

The great importance of occupational exploration and career choice, and the many requirements of adequate career preparation make career education a legitimate frame of reference for an educational program (viz. professional schools in universities). Moreover, young people's high interest in their vocational future makes career education an effective context for teaching many facts, concepts, and skills.

At the very least, every student should have an opportunity to learn about the wide variety of career opportunities, and to pursue at least an exploratory program in the career field of his choice. The programs offered by O.S.S.D. should reflect the variety of opportunities for the deaf and the interests of the students.

THE ROLE OF COLLEGE

Despite its importance and relevance, career education continues to be inferior education in most schools. For a variety of reasons, primary and secondary schools are guilty of a serious perversion of the American goal of equality of opportunity for all. Their programs are geared more for the university-bound minority than for the majority, who for one reason or another, will follow other paths. The fact is that few enter and even fewer complete four-year college programs. Every student, regardless of religious commitment, or racial heritage, or IQ level, is entitled to an adequate education in our public schools. All students must be viewed as equally valuable

and their individual successes equally important.

It is reported that when word is relayed to the Gallaudet-preparatory class of their acceptance by Gallaudet College, there is unrestrained celebration. This same spirit of desire and motivation must be enjoyed by all students, regardless of their academic potential. The mentally retarded student being trained for an assembly-line job must be aware of and view his goals with the same desire and enthusiasm as does the Gallaudet-bound student. To achieve personal satisfaction, the student must be involved in all basic decision making, and teachers must realize that the administration views the teachers' success with this type of student with as much pride as they do the teachers who succeed with Gallaudet students. Announcements of all accomplishments—admission to Gallaudet, or Seattle, or an OJT program, or employment—must convey equal status if the worth of every student is to be recognized.

It must be made clear to all concerned that appropriate individual choice may not involve college. Enrollment in college is at best an interim choice, which hopefully will lead to something more lasting. College itself is not a career. At best it is preparation for a career, at worst, it is a move in the wrong direction, often terminated in failure. Thus, while college may be part of a person's career education program, just as apprenticeship or entry job may be part of that program, college is not a final goal in itself, nor is it necessarily a superior intermediate goal. Every student, before choosing college over some other post-secondary activity, needs an extensive, if not intensive, career choice and preparation program.

ACADEMIC VS. VOCATIONAL EDUCATION

The distinction between academic subjects and vocational subjects is a false distinction which should be abolished in practice just as it is being abandoned as a principle. Mathematics is a dramatic example of a subject, usually designated "academic" and taught theoretically, which is essential to many occupations. Those concerned with educational theory are in increasing agreement that the valid distinction is one of emphasis only, not of content. The recent Yearbook of the National

Society for the Study of Education which dealt with vocational education concluded that integration of vocational and academic education into career education is the policy to pursue.

What is obviously needed is a truly liberal academic community in which the study of art and typewriting, of philosophy and accounting, of theology and medicine, of pure and applied science are, though admittedly very different, judged to be equally honorable and valuable in their several ways.¹

Popular supposition is that the 'vocational-education issue' revolves around the questions of what occupationally labeled discrete courses shall be offered, how many of them shall be permitted to the individual student as alternates for 'general education,' and at what school levels these alternative offerings shall be available. The vocational purpose is viewed as something discrete from the general education purpose of the common school, the time spent on vocational education as taken away from general education. But such supposition is fallacious. In the first place, occupation-labeled courses frequently are prime vehicles for achieving such outcomes as proficiency in communication, ability to handle quantitative relationships, command of problem-solving processes, and many other 'prime essentials of schooling.' In fact, such achievements for some pupils have proved to be impossible in the absence of occupation-centered methodology. In the second place, occupation-centering is typically used as the magnet which holds pupils in contact with so-called general education. In the third place, some vocational education reinforces much abstract learning by affording opportunities for practical applications, thus helping general education make sense.²

"Every worth-while educational program contains both a cultural and a vocational element."³

¹Theodore M. Greene, "A Liberal Christian Idealist Philosophy of Education," quoted by Melvin L. Barlow in "The Challenge to Vocational Education," in Vocational Education (The Sixty-fourth Yearbook of the National Society for the Study of Education), (Chicago: University of Chicago Press), 1965, p. 3.

²Laurence D. Haskew and Inez Wallace Tumlin, "Vocational Education in the Curriculum of the Common School," in Barlow, pp. 68-69.

³Eli Ginzberg, "Social and Economic Trends," in Barlow, p. 20.

THE CLUSTER APPROACH TO EDUCATION

The career cluster approach to education now being implemented in schools throughout Oregon is an effective way to give focus to a student's educational experience, to introduce him to the variety of the world of work, to break down the stigma attached to vocational training, and to prepare students effectively for employment and/or further education.

The cluster approach to education is based on the principle that the basic function of occupations can be defined, and that such an identification results in meaningful groupings for a variety of purposes, notably career guidance and career education.

The occupational cluster concept simply holds that occupations may be classified into logically related groups on the basis of authentic identical or similar elements or characteristics Hence, as it is used in this Guide, a 'cluster of occupations' is composed of recognized occupations which are logically related because they include identical or similar teachable skill and knowledge requirements.⁴

Educational programs based upon the cluster concept should, then, develop in the student entry-level competencies in a related variety of jobs and provide flexibility in terms of occupational, educational, and geographic mobility.⁵

The mechanics of implementation of a cluster curriculum may be debated, but the relevance of the concept, especially for career exploration is very great. Substantial and increasing amounts of curricular material are available on a cluster basis as cluster programs are implemented in more and more Oregon high schools.

TEACHING METHODS

Career choice and preparation, for all its importance, is not a simple undertaking. It requires real understanding of ones self, of

⁴Guide to Structure and Articulation of Occupational Education Programs, (Salem: Oregon Board of Education), p. 12.

⁵Ibid., p. 13.

institutions, and of the economic system, as well as self-discipline, social skills, and technical skills. This is learning which is not accomplished through instruction in the classroom alone; a variety of educational activities, both in-school and out-of-school, are called for.

Lasting vocational adjustment depends on a number of factors, not the least of which is the process of translating an emerging self concept into occupational roles. This depends more on process, experience, and internalization than on information and facts.⁶ Employers repeatedly report that the most frequent deficiency among new workers is their inability to function in a productive organization. The importance of the students' living and social experiences through the dormitory program can hardly be over-emphasized in this connection. Social growth, including the ability to function effectively with hearing peers and superiors, is extremely important.

We are in concurrence with the objective of career education in Oregon enunciated by Leonard Kunzman, Director of Career Education for the Oregon Board of Education.

The public schools in Oregon are responsible for providing every young person with educational opportunities that will enable him to develop to his full potential. . . . Schools have a three-fold objective: to help young people (a) discover their individual interests and abilities, (b) explore the many avenues of productive activity that might challenge and enlarge their individual talents, and (c) learn the wise exercise of freedom of choice, self-direction, self-discipline, and responsibility.⁷

Every student who leaves O.S.S.D. should do so with his own specific, obtainable plan for the immediate future and a general, long-range career goal. This requires his knowledge of career opportunities, an understanding of himself, and sufficient skills to make success possible. That plan must reflect the particular combination of attributes possessed by the individual student. The program offered by the school

⁶Special thanks is due Gary Weber for giving this point needed emphasis.

⁷Leonard E. Kunzman, Career Education in Oregon, A Statement on Improvement of Vocational Instruction in Oregon Schools, (Salem: Oregon Board of Education).

must be one which recognizes individual differences and provides for them. This is especially true for the multi-handicapped students who make up a one-third portion of the student body.

The remainder of Part II of this report consists of a general outline of a career education program, with specific recommendations provided where possible to serve as aides in implementation. There are three major components to the program: vocational guidance, occupational exploration, and advanced career preparation. Each is presented in turn, together with recommendations, although it is recognized that all three can only be fully effective if they are closely inter-related. The extreme importance of staff development must be recognized in considering implementation of any part of the plan. The "long range" objectives are listed to indicate the scope of the program. These are objectives for the next three to seven years. "Immediate" objectives are listed to indicate high priority activities and activities which are likely to yield substantial progress with minimal budget additions. These objectives should be undertaken in the ensuing biennium.

The plan described here attempts to do the following things: to provide guidance and exploratory opportunities, to put emphasis on choice of career field, to integrate "academic" and "vocational" instruction, to individualize programs by providing a flexible timetable and a variety of learning experiences, and to provide a follow-through and follow-up.

RECOMMENDATIONS REGARDING CAREER GUIDANCE

Effectively, there is no guidance system at the school. In the past, a few teachers have been relieved of teaching duties one hour per day for counseling, but even that has diminished as teaching loads have picked up.

Strong career guidance services are essential to an effective career education program. Vocational guidance must begin early, in concert with occupational exploratory programs, and it ought to continue past high school until a person is well established in a career area. Vocational guidance should be part of a broad counseling program so that career considerations can be dealt with in relation to personal, social, and academic factors. In this connection the study committee recommends the adoption of Accomplishment No. 3 of Career Education in Oregon, the Oregon Board of Education's statement on improving career education. The objectives of that statement which are relevant to the situation at the School for the Deaf are as follows:

Providing guidance services adequate to assure that every young person gains expert help in assessing his personal interests, aptitudes and abilities, in making career choices, and in planning an appropriate educational program.

Adoption of an integrated counseling and guidance program that will:

- a. Place at the elementary level, major responsibility for preventive counseling (spotting behavioral problems and developing effective solutions) and orientation to the world of work (with initial emphasis on the development of positive attitudes toward all occupations during the elementary grade experiences).
- b. Place major responsibility at the secondary level, particularly at grades 7, 8, and 9 for helping all students determine general, but tentative, career goals and life styles.

Students at the high school level should not be required to choose a specific occupation. But they should select a broad field of interest, and the school and curriculum should be so structured that if a student wants to change even the broad area in which he is studying, he can do so with minimum frustration. Counselors should be oriented

to thoroughly understand all programs so that they may work meaningfully with students in aiding them to make decisions consistent with interests and aptitudes.

Educators and parents have probably worried excessively about the fact that students' goals change often. Goals will change. But this does not alter the fact that individuals work better and are more highly motivated when they have short- and long-range goals. Aimlessness is one of the plagues of secondary and college students.

The significance of the career-cluster approach is that students need not set a specific career goal but a general goal. It is still possible to connect most of the secondary-school experiences to the general goal without pinpointing specific careers.

Assure that every student is suitably prepared for and has adequate assistance in taking the next step after high school graduation, whether that step is into post-high school or college work, apprenticeship training, an entry-level job, or homemaking.

The counselor, as well as the student, his major instructor, his parents, and his dormitory counselor, should be involved in any major curricular decision affecting a student's advanced career education programs. Follow-through should include helping the employer and student deal with problems that might arise.

Throughout the career exploratory and advanced career education stages of the students' program at the school, the relationship between vocational choice and personal life styles should be emphasized and vocational guidance should be systematically related to dormitory programs as well as to instructional programs.

It cannot be emphasized too strongly that there is an extremely strong relationship between satisfactory personal and social development and successful career preparation. It is apparent to the study committee that social development of students at O.S.S.D. is retarded, in part because of their physical handicap and in part because of their institutional isolation. One person told us about two recent graduates of the school, "Both had the skills required to perform their jobs, but neither of them were aware of appropriate behavior within the office setting, and communication was not nearly the problem that socialization was." Proper social development is extremely important in itself, but it is also important to the career choice process and to keeping a job. The very successful and progressive "advanced" dormitory program at O.S.S.D. offers great oppor-

tunity for further development of independent living programs. Various coordinated activities with hearing children and with adults should be increased, e.g., through the use of "foster families" for social, or even residential purposes. At the 1967 Colorado Springs meeting of the National Conference on Education of the Deaf, the group dealing with problems of the 17-21 age group concerned itself chiefly with effective socialization.

Educators were urged to stimulate peer group experiences with hearing young people, to set relatively high educational goals, and to provide realistic counseling and vocational guidance. The use of field trips to industrial firms, public agencies and the like, and the involvement of business and labor representatives in instructional programs, were suggested as methods to help the deaf adolescent adjust successfully to adult living.¹

Dormitory programs should be instituted under the direction of the school psychologist, the Dean of Students, and the vocational counselor to enhance the students' opportunities for successful living. Areas in such a program would include at least the following: programs to enable the students to function effectively in independent and cooperative living, and in personal, civic, and economic activities through learning the wise exercise of freedom of choice, self-direction, self-discipline, and responsibility. Such a program should include instruction in family living, preparation for marriage, instruction in drug abuse, sex education, personal finance, and other topics.

While career guidance is an important part of a career education program, it must be, as has been noted above, integrated with the entire guidance system. The emphasis of guidance in the pre-school and primary years should be on family casework; in the upper years increasing emphasis should be given to vocational guidance. At appropriate points in the educational and guidance process, and certainly at the intermediate level where tentative career choices are being made, complete assessment—medical, psycho-social, vocational—needs to be made. It is recognized that tests are frequently invalid assessment devices for deaf children, although it is hoped that maximum use will be made of the findings of T.J. Holdt's Voca-

¹"Education of the Deaf, The Challenge and the Charge," A Report of the National Conference on Education of the Deaf (Washington, D.C.: U.S. Government Printing Office, 1967), p. 102.

tional Research Project. Alternative assessment devices such as staff judgmental assessment statements, can be helpful in assessing social adjustment if all staff, who see the student in various settings, prepare assessment reports.

It is the judgment of the study team and the Advisory Committee that counseling (of all kinds) is a priority item for the school, and that staff and administration should work out a rationale and develop a commitment for a sound counseling program.

Much attention has been given to the guidance function by both the study team and the Advisory Committee. The lack of a counseling program is a big problem which deserves fuller examination than we can give it. We recommend a study of the dormitory and counseling program as a necessary counterpart to the present study of career education.

LONG RANGE OBJECTIVES

Undertake a study of the dormitory program and its effect on the social maturation of O.S.S.D. students. Implement a complete guidance service system.

Have established, through cooperation with Vocational Rehabilitation Division, the Employment Division, and others, sufficient additional vocational guidance services to meet the needs of students in the advanced career education program and to provide continued counseling in the transition period following graduation. Use of such agency resources will help get youngsters into appropriate post-secondary programs.

Integrate the vocational counselor's activities into the program of the school by providing for regular attendance at staff meetings, regular consultation between the counselor and both vocational and academic teachers regarding student progress and special instructional needs, and by requiring regular reporting to all instructional staff on the progress of the individuals who have recently graduated from the school.

IMMEDIATE OBJECTIVES

1. During the next year the Oregon Vocational Rehabilitation

Division plans to add additional counselors for the deaf. The school should make maximum use of this resource by arranging with the Vocational Rehabilitation Division to have the equivalent of one full-time vocational rehabilitation counselor assigned to work at the school with O.S.S.D. students. This is an interim remedy pending development of a complete program.

2. Upgrade the position of Dormitory Counselor, in organizational authority and pay, to reflect the written specifications:

The Dormitory Counselor works with considerable independence in counseling, giving guidance, care, and training to children who have individual problems of adjustment to group life as a result of a physical handicap. He observes the child and makes recommendations on the individual child's adjustment, striving to help the child in all respects. He has responsibility for creating a satisfactory environment for the child's group life and activities.

In this connection, we see great value in the mixing of youngsters of different ages in healthy activities. This has been done with good results in other deaf schools.

3. Update and implement the unit staffing plan described in "A Plan for Program Responsibility and Curriculum Development." (O.S.S.D., July, 1965, Revised July, 1967)

4. Add guidance staff to make possible frequent and meaningful participation of families in the education and planning of their children. Create positions for two guidance counselors and one vocational counselor assigned to the high school department to work with the student and his family in exploring the student's interests and abilities and solving any personal, academic problems, as well as helping with career choice.

RECOMMENDATIONS REGARDING OCCUPATIONAL EXPLORATION

Mr. Kenneth Welch, who represents the Oregon Association for the Deaf on the Advisory Committee, says about O.S.S.D. students, "They are not aware of what they want to do after finishing school."

The choice of a career field should be a principal objective of the educational and living experience of every student from the time he enters the seventh grade until he graduates from the school. This can be made possible in two ways: by a massive infusion of "real life" examples into the curriculum in every subject area, and by specific occupational exploratory programs beginning in the elementary school. Teachers "must bring into the teaching process examples of how the concepts, symbols, and language of their particular disciplines can be used in everyday life, and more particularly in careers. . . . We will need to find ways to pull out the relevant things that each subject has to offer to those who will not be specializing in the subject area field."¹

In addition we must add systematic opportunities for students to explore all of the aspects of various career fields. More "occupational exploration" courses need to be added so that all students will learn about the variety of fields open to them. This will require a variety of instructional methods. Industrial arts and home-making courses are commonly used at the junior high level. The present wood shop and some of the other facilities, with broadened curricula, are appropriate for this purpose. There also needs to be "occupational exploration" courses in many fields and many out-of-classroom experiences, such as field trips, Work Sampling, exploratory work experience, part-time and summer jobs both on and off campus. The study team is impressed with the great potential of the service units of the school for work experience. This resource should be developed so that every part of the school contributes to the education as well as the housing, feeding, and health of students.

¹From Leonard E. Kunzman, "Career Education in Oregon."

Occupational exploration will, of course, also involve the use of a variety of classroom materials including current occupational information, occupational biographies and fiction, guest speakers, samples of occupational material, and other teaching aides.

Occupational exploration will need to be closely coordinated with the guidance program, because occupational exploration must take some account of individual students' abilities and interests. For the students whose realistic options include post-high school education, the emphasis should be on broadening their perspectives and facilitating choice of a career cluster. For students who will go directly into employment, the emphasis should be on (1) early selection of an entry occupation where career progress does not require additional education, and (2) preparation for that occupation. Such students should be able to move rapidly from exploratory courses into an Advanced Career Preparation program which will involve substantial job-readiness training and on-the-job experience.

Continued contact by school staff with their areas of professional responsibility will be required. Staff should be provided incentives to undertake summer work in the career areas where they have instructional responsibility in order to update their skills and knowledge and establish contacts. Such contacts might lead to arrangements whereby a firm would employ a teacher and several deaf students in a work experience program for a summer.

LONG RANGE OBJECTIVES

Provide for occupational exploration which will introduce students to the following occupational clusters where deaf persons may have successful careers: Clerical Occupations, Bookkeeping-Accounting Occupations (including data processing), Timber Products Occupations, Construction Occupations, Metal-Working Occupations, Electricity-Electronics Occupations, Machine Operating Occupations, Manual and Manipulative Occupations, Inspecting--Testing--Checking Occupations, Food Service Occupations, Personal Service Occupations, Education and Social Service Occupations (including education, guidance, and recreation), Engineering and Design Occupations, Printing and Graphic Arts Occupations, Laboratory

Occupations, Mechanical Occupations, Building and Grounds Maintenance Occupations.

Exploratory course units covering these clusters individually or in related groups should be developed and offered regularly to 7, 8, and 9th grade students. Individual instructional staff from all departments of the school should be designated as responsible for maintaining high quality exploratory programs in each of these occupational areas.

It is recognized that exploration of these clusters will require additional staff effort, both to include examples from these clusters in other courses and to design and teach occupational exploration classes. It is expected that the present staff, intermediate and secondary level teachers, and service department personnel, can operate such a program with the assistance of a person who would be available to help develop necessary part-time job sites, acquire materials, and arrange field visits. Such a "career education resource consultant" should be added to the staff, at least until programs are developed and implemented. Present staff would, of course, need to be relieved of certain less urgent duties. (The section on "Resources" discusses the ways of accomplishing these objectives.)

An effective career exploration program should provide that each student would have exploratory work experience in at least six occupational clusters of his choice, including some off-campus work experience.

IMMEDIATE OBJECTIVES

Begin making use of the excellent opportunities for total utilization of resources of O.S.S.D. for occupational exploration including the physical plant, infirmary, kitchen, dormitories, office, and instructional areas.

Provide each student in grades 7, 8, and 9 with some occupational exploration and with at least one exploratory work experience. Technical assistance from the Oregon Board of Education should be made use of in developing the necessary curricula. Designate a position, or at least a part-time position in the School or in the Special Schools Division, to begin fulfilling the duties of a "career education resource consultant."

RECOMMENDATIONS REGARDING CAREER PREPARATION

There has recently been great expansion of post-secondary technical education resources generally and of such resources for the deaf specifically. This development makes it feasible, and in the view of the study team, advisable, to defer technical training for specific occupations to those institutions which are better equipped, by virtue of their size and specialization, to handle such training.

Such an approach seems economically the only feasible approach. It has the additional advantage of providing a gradual transition for students from the all-deaf O.S.S.D. to the hearing world of work and social living.

The regional facility at Seattle Community College has had good success with O.S.S.D. students, and the facilities of N.T.I.D. and the other regional centers are not beyond reach of O.S.S.D. students as indicated by the school attendance of recent graduates. Locally, Chemeketa Community College in Salem has demonstrated a willingness to take special steps to adapt to the needs of deaf students, and they are willing to work further in this field. O.S.S.D. should work out a cooperative agreement with Chemeketa Community College to improve deaf students' chances in regular community college programs by bringing about changes in the preparatory programs at O.S.S.D. and in the programs at the community colleges.

In relying on these institutions for advanced technical training, O.S.S.D. should not neglect the interests of its students, but should constantly evaluate the quality and relevance of the instruction being received so that O.S.S.D. staff can adequately advise its future students about alternative post-secondary opportunities. The less than full success of Gallaudet College with O.S.S.D. graduates points to the continuing need for such evaluation.

The curriculum of the Oregon school should emphasize cluster programs leading to entry employment positions or advanced, post-secondary training.

COMPLETION PROGRAMS

Adequate guidance and occupational exploration should lead to at least a tentative selection of a general career area by the end of the ninth or tenth grade. At this point each student should map a Completion Plan to follow during his final years at O.S.S.D.

The Completion Program should be built around short-range education and employment objectives and long-range career goals, and should reflect the realities of the student's own abilities, interests, and other resources and the probabilities of his success in future training or employment. The Completion Program should outline a course of study and other activities which will move the student as rapidly as possible toward his immediate objective and his long-range goal.

The Completion Plan defined:

A plan of action developed jointly by the O.S.S.D. student, his or her parents, his major instructor, and the O.S.S.D. or D.V.R. counselor which states in clear, concise terms the short-range objectives and long-range goals of occupational preparation and thus employability. It should state the steps to be taken to implement the plan together with a timetable for implementation. This will include some combination of classroom and laboratory education at O.S.S.D., work exploration, work experience, work sampling, on-the-job training, post-secondary education, and job placement, and all the supportive services necessary to implement the plan and enable the student to enter on a satisfactory career.

When the student develops his completion plan, care will be taken to assure that every student will have an education in which he will develop the capability to fulfill his citizenship and family roles as well as his career role. Social maturity is an important attribute of a high school graduate and an important ingredient in job readiness. It should be consciously encouraged in the completion program. Opportunities for leadership development through career curriculum related organizations should be provided. The writing of a formal Completion Program will assure proper emphasis to the important matter of career preparation, however, and will help assure the efficient and effective use of both the student's time and the school's resources.

The Completion Program should be planned by the student, with the assistance and concurrence of his Major Instructor, his vocational counselor, and his parents. The student should be free to modify or totally

change his program if it later seems inappropriate, but it must not be changed without his concurrence.

MAJOR INSTRUCTOR

A Major Instructor should be designated for each advanced student, regardless of his orientation. This should be the teacher or other staff person best able to help the student through his Completion Program. The Major Instructor would be responsible for the successful completion of the program, for ensuring the relevance of related instruction, and for arranging work experience and other educational activities. In this he would have the assistance of counseling and career education resource development staff.

The duration and content of individual Completion Programs should be flexible, but students should be encouraged to complete their programs as rapidly as possible. Individually tailored timetables for completion will be healthy for the students and should also result in a more efficient allocation of public funds. At average annual costs of \$4700 per student, any savings in time which will not jeopardize a student's education is worth pursuing.

In all cases, the timetable should be planned along with class, laboratory, and field experience. Programs for some students may require no more than a year's time; others may require three years. Rapid completion should be the goal, and all students should graduate when they are ready, not just when they have completed a standard twelfth grade curriculum.

Flexible timetables for graduation would not lead to young children being turned from O.S.S.D. onto the labor market, since high school students at O.S.S.D. tend to be considerably older than their hearing counterparts.

Working with a conscious plan for completion will help the school exercise its responsibility for students after they leave the campus, whether to a job or to school. The "trial employment program" in the New Jersey school is an example of such continuing concern for the success of students.

Every one of the vocational graduates was employed before graduation, and many had been employed since the previous February as part of our trial employment program. This means that, beginning with the second semester of the senior year, our vocational students are eligible for employment. Every effort is made to secure employment near the student's home; within the field of his instruction, skill, and knowledge; and where there is a chance for advancement.

No subsidies are paid to the employer to train or instruct. He gets a full-time employee, a man or woman he needs at the moment, without having to wait for a prospective employee to graduate in June.

The student has full-time job and a chance to prove himself. If he fails, he knows that he can come back to school for further instruction. In fact, we insist, in case things do not work out well at first, that he come back to correct the reason for his failure. Most important for students is the fact that, even before graduation, they are fully employed and do not have to look for a job.¹

In an effort to respond to the individual needs of individual students, the school should take pains to give equal status to all programs. Any distinction between academic, career, and vocational diplomas should therefore be eliminated.

Every effort should be made to tailor the Completion Program of each individual student to meet his own needs and ambition and to avoid channeling students for convenience of class scheduling or other factors. However, some examples may indicate how the system would work for different students.

Example A: A student who wishes to become a teacher of the deaf.

Such a student should pursue a program designed to prepare him for the post-secondary education required for teaching as well as prepare him for the career itself. This should involve college prep courses in the subjects required by colleges, following extensive exploratory experiences in education and social service cluster occupations. His program should also involve visitations to colleges where he might obtain training and some work experience as a teacher aide and/or assistant dormitory counselor.

Example B: A student who is a slow learner and interested in assembly work.

¹Hollis W. Wyks, "Vocational Education for the Noncollege Bound Youth," in Volta Review, Vol. 72, (Washington, D.C.), 1970, p. 98.

An appropriate program for such a student will be one which prepared him for employment and helps him find suitable employment. He should have had a variety of exploratory work experiences, and should concentrate on learning how to function independently in a work setting. Cooperative work experience should be a major part of his program, supplemented by classroom instruction in a Diversified Occupations Program approved by the State Board of Education. On-the-job experience, including some away from the School, would be part of his Completion Program. As with other students, he may return to school if remediation is needed. Job placement is his goal, and he should be on a permanent job at least three months before graduation.

Example C: A student who wants to become a welder.

Such a student should have a program which will give him necessary background in metal working and related subjects. He should learn the basics of the trade in the School's metal shop preparatory to specific vocational training at Seattle Community College, Chemeketa Community College, or another school where proficiency can be gained. His program should contain some work experience in related activities.

Example D: A girl who does not intend to work, but to become a homemaker.

Such a student should have intensive training in areas of family living, including sex education, preparation for marriage, family finance, child care, household maintenance, and other pertinent courses. (All students should have some preparation in these areas.) She should also develop knowledge of labor market institutions and some entry job skills not requiring advanced training. She should have household work experience consistent with her goal as homemaker and some non-household work experience to familiarize her with the work world.

It should be apparent from the above examples that an integration of so-called academic and the so-called vocational courses is called for in nearly every program, and they should be integrated. Concepts, facts, manipulative, and social skills must be learned, and these requirements respect no such artificial boundaries. Shop classes must be more than make-work; they must serve as laboratories for learning about careers. Their instructional content must be as closely related to classroom work as science laboratory experiences are to science classroom instruction. Shops might best be re-named "career labs."

It should also be apparent that many facilities besides those

in the vocational wing need to be used. In addition to integration of the entire school curriculum, every major service area of O.S.S.D. should be examined for exploratory work experience settings, and provision should be made with staff in those areas for vocational skill training when a student chooses that area. For instance, a student who wants to be a cook should not only learn about food services generally, but should have an opportunity to work with the school's food service personnel and learn all they can teach him. (The highly regarded food service training program at Oregon State Correctional Institution makes just such use of institution food service facilities.) This will permit maximum utilization of all school resources for educational purposes. The following areas should be open for exploration and advanced training:

Office	Dormitories
Physical Plant	Educational
Infirmary	Printing
Kitchen	

USE OF PRESENT VOCATIONAL FACILITIES

Business Department Instruction should be continued and broadened. Courses in office practices and in bookkeeping-accounting should be added. Some business instruction will be important for many students pursuing various objectives. For students pursuing careers in clerical or bookkeeping-accounting occupations, this should be the major instructional area. Care should be taken not to give excessive emphasis to key-punch training.

Printing This nominally vocational area is in practice primarily a service component of the school. It should be so designated and used for exploratory work experience just as other service areas (infirmary, physical plant, etc.) are used. Individual students who choose printing as a career field can pursue their work in the school's printing plant, with the printing instructor as their Major Instructor. An apprentice format involving 2-hour blocks rather than a class format should be used for these students.

The print shop is equipped with much adequate equipment, which should be supplemented. The antiquated lino-type equipment should be

removed, however, and the program emphasis shifted more heavily to off-set and to the related printing and graphic arts areas.

Another, more general graphic arts option should be instituted in cooperation with the art shop, wherein the students would learn something about printing as well as the photo lab, lay-up, etc.

Metal Shop Equipment in this facility should be upgraded. The shop should be used for both exploratory and for pre-apprentice type training, but "shop work" should be integrated with "class work" in this area as in all others. Efforts should be made to make shop projects as relevant to real needs as possible, possibly by coordinating them with physical plant needs of the school. Community service activities such as the Salvation Army Kettle project should be encouraged whenever they meet the educational needs of the students. Basic occupational skills in the various metals trades such as welding and sheet metal should be developed with advanced community college or on-the-job training as the next step.

Woodworking, Mechanical Drawing, Small Motor Repair, Electronics The present program in these areas is certainly pre-vocational, and, as in many high schools, seems to serve as a dumping ground for students who do poorly in textbook courses. This group of courses covers a number of areas of real career importance where substantial programs should be developed.

Woodshop This facility seems best used for industrial arts purposes and possibly as part of a course in General Home Maintenance which should be encouraged for both boys and girls. Cabinet making in the sense of an all-round journeyman cabinet maker is not a promising career area because production of cabinets is becoming increasingly mechanized. There is little in the curriculum of relevance to wood products careers.

Electronics This equipment will be transferred to Salem Rehabilitation Facility as part of a more extensive electronics curriculum. Its value was mostly at the level of industrial arts, and the school can afford to forego this offering. The resources of Salem Rehabilitation Facility will be available to students with particular interests in this area. The Individualized Curriculum in Electronics (ICE) being developed

in high schools and community colleges by Oregon State University could prove valuable to the School in future years.

Small Engine Repair This can serve as part of an expanded Mechanics cluster curriculum involving work on automobile motors and other auto systems. This is an occupational area with good opportunities for immediate entry (lube man, tire repair, etc.) and for long-range careers (auto mechanic, body and fender men, etc.) with or without post-secondary training. Motivation among high school boys is usually high, especially if they can work on their own cars as could be the case here. A strong program should be developed, including body and fender in cooperation with the metals lab.

Drafting This is a good career area for deaf and the curriculum should be deepened to provide more advanced skills and broadened to cover more of the planning, engineering, and design cluster.

Shoe Repair Shoe repair is a traditional training field for deaf boys, but one which is not appropriate in today's economy. Graduates of O.S.S.D. do not get the few jobs in this occupation, and future career prospects are not good.

The shoe repair shop provides a helpful but non-essential service to parents, who bear the other clothing costs of their children. The shoe repair service seems of much lower priority than career education programs which need to be developed, so it should be dropped.

Homemaking This program should continue to concentrate on "the strengthening of home life" rather than paid employment. (Although it apparently can qualify for vocational education funds.) Advanced occupational preparatory programs should be available, but on an individualized basis, in food service, health, and personal services. A complete program in family living should be re-instituted, including a wide variety of courses in child care, personal and social relationships, preparation for marriage, home health, sex education, family finance, interior decorating, home maintenance, etc. Every student (including boys) should take certain basic courses.

Girls whose Completion Program is in Homemaking should have a comprehensive program in homemaking, but their Completion Program should include some entry-level job skills and some work experience so they will

be equipped to meet that contingency should the need arise.

USE OF OTHER FACILITIES

Major Instructors and Occupational Preparatory Programs should be designated in the following additional areas which are closely related to existing O.S.S.D. service units.

Laboratory Occupations (Infirmary)
Personal Services (Dormitories)
Building and Grounds Maintenance (Physical Plant)
Food Service (Cafeteria)
Machine Tending and Manual-Manipulating (Various)

Major Instructors for these program areas should come from service units themselves and from existing "academic" as well as "vocational" faculty with maximum input from other school staff. Use of service facilities of the school has already been mentioned, but its applicability to the education of O.S.S.D. students can hardly be over-emphasized. Careful attention must be given to the problem of re-orienting service staff. Retraining and changed position descriptions will undoubtedly be needed.

Off-campus resources should also be used much more extensively than is now the case. A number of such resources can be mentioned.

Industry Advisors Advisors from industry should be used to help plan Advanced Career Preparation programs and to talk to students.

Off-Campus Trips, Work Experience Field trips, speakers, and both exploratory and cooperative work experience should be developed off-campus. This is an effective way of educating employers as well as students, and the business community is responsive to such opportunities.

Social Service Agencies The Vocational Rehabilitation Division, Employment Division, and the Oregon Board of Education are excellent resources for program development assistance. Recommendations regarding relationships with VRD are discussed in the section on counseling. The Employment Service should be used to facilitate graduate placement (but the school should not ignore its ultimate responsibility in this area). Employment Division personnel can also be helpful in arranging contacts with employers, in test development, in providing labor market information,

and in job coaching.

The technical staff of the Division of Community Colleges and Career Education in the Oregon Board of Education is available to assist in the development of both exploratory and advanced programs. Maximum use should be made of this resource as well as the vocational education funds available from that source.

EVALUATION, FOLLOW-THROUGH, FOLLOW-UP

Continuous evaluation is essential to the success of any program, but it is especially important to a program that attempts to prepare people for the diverse and changing world of work. As indicated, educational and job placement should be part of the school's follow-through. A planned career development model such as that proposed here cannot reach a terminal point at the end of formal academic work. Part of the work experience program should be regular on-site visits by Major Instructors. The school should initiate a regular system for getting feedback on the progress of work experience students and of recent graduates. The school, perhaps with the assistance of Vocational Rehabilitation counselors should undertake systematic follow-up of all graduates for at least two years. The Employment Division could be a helpful source of continued, post-high school counseling and placement services. Reports on individuals should go to the students' Major Instructors.

Full use should also be made of occupational demand projections and other labor force studies prepared by the Oregon Employment Division, in order to keep the school's programs in touch with developing labor market trends.

LONG RANGE OBJECTIVES

An Advanced Career Preparation Curriculum as outlined above, based on career goals that will "allow all students to prepare for the occupational field of their choice by acquiring skills and knowledges that will enable them to (a) obtain entry-level employment in jobs not requiring advanced training, and (b) continue education and training in post-high school institutions or in business and industry."

IMMEDIATE OBJECTIVES

Designate Major Instructors for all students in the final two years of high school.

Terminate the Shoe Repair Program.

Re-designate the Printing Shop as a Service area and adapt the curriculum as suggested above.

Begin upgrading and expanding the offerings in Homemaking and Mechanics.

Elicit the aide of the State Board of Education in developing sound, reimbursable Advanced Occupational Preparatory Programs.

Begin developing programs in career cluster programs:

From Present "Vocational" Department

Printing and Graphic Arts

Clerical and Bookkeeping-Accounting

Utilizing Other School Resources

Building and Grounds Maintenance*

Food Service*

Education and Social Services

Begin regular follow-up of graduates.

*Especially appropriate for multi-handicapped.

SUMMARY OF PROPOSED CAREER EDUCATION PROGRAM

The result of these recommendations is that the O.S.S.D. student will have a broader range of educational experiences related to more of his developmental needs, most notably social development, career choice, and career preparation.

Upon enrolling at O.S.S.D. the child's school work would emphasize communications and other basic skills and knowledges with many "real-world" examples from careers and other important human activities. His life at the school would also involve frequent social contacts with both deaf and hearing children of all ages and with adults.

Dormitory and guidance counselors would be in a position to detect and develop effective solutions for behavioral and learning problems. There would be frequent, cooperative contact between the school and the child's family.

Career education would consist mostly of introduction to the world of work through the use of job-related examples in all course work in the early elementary years and through initial occupational exploration courses in the later elementary years. Some knowledge about and positive attitudes toward all types of occupations would be the goal.

In the intermediate years the school program would capitalize on the tendency of adolescents for exploration and socialization to continually broaden the student's knowledge of the world around him. More off-campus activities emphasizing healthy social behavior and attitudes, wise consumer practices, and sound work habits would be instituted. Community service projects would help students develop a concern for helping others. Career education would receive increased emphasis through occupational exploration courses involving a variety of activities including field trips, work sampling, and other job related activities both on and off campus integrated with shop, or "career lab," activities and skill development activities in other courses. In grades 7, 8, and 9 counseling would augment coursework in helping students toward general, but tentative, career goals and life styles.

Up to this point, the objectives of the program are essentially the same for all students (although the methods will of course differ depending on the particular student). The curriculum will emphasize the traditional acquisition of essential knowledge and development of essential mental and physical skills, but it will also give needed attention to wholesome social growth and a broad-based understanding of career options, occupational requirements and rewards, and active participation in the career choice process.

In the high school years, career education will be one of the dominant themes of the school's program, and individualized programming will be required. Continued occupational exploration, with more work experience activities and vocational assessment and counseling will continue until the student is ready to map his "Completion Program."

The Completion Program will act as:

A plan of action developed jointly by the O.S.S.D. student, his or her parents, his major instructor, and the O.S.S.D. or D.V.R. counselor which states in clear, concise terms the short-range objectives and long-range goals of occupational preparation and thus employability. It should state the steps to be taken to implement the plan together with a timetable for implementation. This will include some combination of classroom and laboratory education at O.S.S.D., work exploration, work experience, work sampling, on-the-job training, post-secondary education, and job placement, and all the supportive services necessary to implement the plan and enable the student to enter on a satisfactory career.

This will involve decisions regarding preparation for appropriate types of post-high school education or complete job readiness preparation. The timetable will be flexible, and the student will have the option of changing the plan when that seems advisable to him. He will have the special interest, encouragement, and help of a Major Instructor in completing his program.

The school will facilitate the transition from O.S.S.D. by involving appropriate schools and/or agencies prior to graduation and by maintaining contact with the student following graduation.

RESOURCES FOR DEVELOPING AND OPERATING A CAREER EDUCATION PROGRAM

In the opinion of the project team, the program outlined is not only desirable but also feasible. Although it would be handicapped by the limits of current budget size and allocation, much is possible through reallocation of existing resources, and the program outlined in the recommendations will make the school eligible for certain additional funds.

The additional funds for which the school should be able to qualify are the vocational education funds administered by the Oregon Board of Education. The school should take steps immediately to qualify for reimbursable programs through realignment of some class schedules, certification of certain teachers, and development of a counseling program. With these changes the school should become eligible for some of the regular vocational education funds available to other secondary schools in the state. Additional vocational education funds are ear-marked by Congress for use with disadvantaged and handicapped students. In the 1970-71 estimated federal funds for the Oregon Board of Education, \$295,000 is budgeted for handicapped students. These funds are available on a project basis; the school should pursue this as a source of funding for some of the program development activities called for in these recommendations.

More and more agencies are finding it profitable to have a staff person with specific responsibilities in the area of financial resources. O.S.S.D. has no such person and activity in this complicated area of federal (and foundation) funding falls to administrative staff with many other responsibilities. O.S.S.D.'s reputation as one of the better deaf schools in the country, together with plans for a progressive vocational education program, might put it in good competitive position for project funds of various kinds. Consideration should be given to establishing a position of Program and Grant Developer, probably within the Special Schools Division Administrator's office, to handle this activity for the O.S.S.D. and the blind school.

The school should not overlook the staff resources of the Oregon Board of Education and other schools of the state. The Oregon Board of Education has technical staff to assist schools in developing vocational education programs, and there is special interest in Oregon Board of Education in the education of the deaf. Other schools with effective programs are nearly always willing to entertain visitors and give advice in program development. In this connection, O.S.S.D. staff, at all levels, should be encouraged to participate in organizations and meetings which deal with the many matters common to O.S.S.D. and other small high schools.

O.S.S.D. should also seek the advice and assistance of the Oregon Employment Division and the Vocational Rehabilitation Division in the development of counseling and job placement programs.

The project team believes strongly that there is much merit in the full utilization of school service resources for educational purposes, and that Exploratory and Advanced Career Preparatory programs can be started on campus with small additional resources.

In talking about increasing the vocational curriculum through re-allocation of resources, the study team believes strongly that new duties should not simply be tacked on to the responsibilities of already busy people. Staff should be relieved of less urgent duties and/or financially compensated for their part in developing the career education program. It is recognized, for instance, that staff in the service departments, who now have a single objective--production--must be adequately prepared and compensated for their new educational responsibilities, if necessary, through the restructuring of job classifications.

The appropriate use of para-professional staff such as teacher aides and teacher interns has proven an effective way of relieving teachers in other schools for new duties. The use of trainees such as student teachers from the deaf teacher training programs at Oregon College of Education and Lewis and Clark, counselor interns, and CSPA interns, and the use of deaf school students in their work experience courses can be productive for the School as well as highly educational for the student. The addition of paid teacher aides and the utilization of staff in the service units of the school should go even further toward relieving teachers for the development and operation of the above-described career education program. Increasing some class sizes and scheduling some

courses with small enrollment in alternate years would also add flexibility and free teaching staff for other duties. It appears that some students at O.S.S.D. would qualify for in-school Neighborhood Youth Corps training slots. Use of these resources would be financially and educationally advantageous to the students involved, as well as to the School.

Beyond tapping whatever additional resources are available and reallocating existing resources to achieve maximum development of the career education program, the school administration, through the Special Schools Division, should not hesitate to seek legislative approval for changes which require additional authorization or funding, particularly where such additional funds would be of a temporary nature required to get the programs established.

It is recognized that successful implementation of the various proposals will require some revision of the traditional scheduling and teaching processes. To assist the school in arriving at decisions, the following suggestions are offered: team teaching (to help integrate "academic" and "vocational" curricula), flexible scheduling to allow two-hour vocational laboratory instruction periods and work experience, alternate year scheduling of certain high school courses (e.g., both juniors and seniors taking algebra one year, and geometry the next), thus freeing some instructional staff time to coordinate work experience or other duties.

SUGGESTED IMPLEMENTATION PRIORITIES

It is self-evident that a new, comprehensive program is not implemented in any existing organization all at once. Thus it is important to develop a plan of action and assign priorities.

The study team strongly believes that implementation, because it affects so many departments, must be a total staff effort. To facilitate consideration of the report, we suggest:

1. Distribution of the report to every staff member.
2. A meeting with chief administrative staff, then at least two meetings with each of several workable groups of the general staff to review the report, to get their contributions, and to write a school philosophy for career education to be reviewed and adopted by the total staff.
3. No changes be undertaken until the proposed plan has been discussed, understood, and a philosophy written for the school.
4. Following agreement on a school philosophy for career education, a strategy for implementation should be prepared indicating what actions are to be undertaken first and at what speed. Each department should assess its own capabilities in order to decide what it can do now and what are its most urgent needs requiring additional resources.

Where choices must be made between career education activities, the study team suggests that priorities be assigned in the following order.

1. Development of consensus regarding a philosophy of career education for O.S.S.D. This seems to be a necessary prerequisite to successful implementation of the plan.
2. Development of guidance services, both vocational and personal, including a study and development of dormitory programs which will enhance the social, and therefore the vocational, development of O.S.S.D. students.

3. Development of occupational exploratory programs, including work experience and other on-campus and off-campus activities, so that every student will have an opportunity to consider the career options open to him.

4. Career Preparation programs (primarily in existing vocational areas and consisting in large part of cooperative work experience) for those students who cannot benefit from post-high school education in a community college, four-year college, or other educational institution. These are the students who receive the least preparation now and who must go directly into adult roles after graduation.

5. Career preparation for those students who could attend post-secondary educational institutions, but who choose not to.

SERVICES TO GRADUATES

O.S.S.D. could provide a very important service to the State if it would take on the responsibility, not only for educating deaf youngsters, but also for educating the hearing population of the State and agencies of the State regarding the deaf. Specifically we recommend that the Deaf School sponsor, perhaps jointly with Oregon College of Education, brief workshops for counselors and teachers in other agencies and institutions regarding deafness and the handling of deaf clients and students.

We also recommend repeating the 1968 Conference for Employers and Personnel Managers.

The Deaf School should encourage and assist the current effort by Vocational Rehabilitation staff to establish a registry of interpreters for the deaf. By the same token we would recommend that all social service agencies who are likely to deal with the deaf budget funds for the hiring of interpreters when they are needed. Agencies which are likely to be contacted by large numbers of deaf persons, such as the Employment Service office in Salem, should have a staff person who is at least able to use signs. Brief courses in signing are available at Oregon College of Education.

The School could serve its constituents by playing a more aggressive advocacy role for the deaf in Oregon, both through extended education of the type discussed above and through other means.

Consideration should be given to providing housing and counseling services for adult deaf undertaking training. In considering its responsibilities to the deaf community of the State, O.S.S.D. and the Special Schools Division should consider organizing O.S.S.D. as a "community school."

One final matter, which we have attempted to deal with but which cannot be satisfactorily dealt with within the context of the Deaf School alone, is the special problem of multi-handicapped children.

Deafness is increasingly accompanied by other impairments, and this development presents program problems for the Deaf School and for other special-purpose institutions such as the Blind School, and the State Hospital. Multiply-handicapped youngsters have educational, therapy, and career needs which transcend the competencies and resources of these institutions separately. At some point the State of Oregon should examine and develop plans to meet this complex and growing problem.

Part III: Project Reports

INTRODUCTION: THE OREGON STATE SCHOOL FOR THE DEAF

The Oregon State School for the Deaf is a small school located in a residential section of Salem, Oregon. Its Superintendent is Dr. Marvin Clatterbuck. For the last two years the school, along with the School for the Blind, has been part of the Special Schools Division, headed by Mr. Carl Haugerud. Prior to that time the Oregon State School for the Deaf (O.S.S.D.), along with all the other state institutions, was administered by the Board of Control, which was composed of the Governor, the Secretary of State, and the State Treasurer. Those elected officials were relieved of direct institutional administration in 1968 when the Special Schools Division, the Corrections Division, and the Mental Health Division were created.

O.S.S.D. was founded in 1870, and now has students ranging in age from 3 years, 8 months to about 22 years, coming from nearly every county in the state. The school has a pre-school and a primary unit (through grade 3), an intermediate unit (grades 4-8), and a high school (grades 9-12). O.S.S.D. enrolls about 285 students, somewhat over a third of the deaf children in the state.¹ The vast majority of the students are congenitally deaf, and well over a third are multi-handicapped, learning problems being the most frequent additional handicap.

O.S.S.D. is a residential school. Students live on campus nine months of the year, excepting weekends and holidays when, as a matter of policy, those who can reasonably reach their home cities return to their families. Thus the school, through its educational, dormitory, and social programs, controls the vast majority of the life environment of these children from a very tender age. Whether intended or not, institutionalization shapes the social development of young people already impeded by lack

¹T.J. Holdt, "Data Information and Comments in Relation to Problems of the Deaf Population in Oregon" (memorandum to Carl A. Haugerud, Administrator, Special Schools Division).

of hearing, and it eliminates opportunities for informal personal contacts with the variety of life in society at large. O.S.S.D. has traditionally operated under a rather rigidly protective structure, which has denied students many opportunities for learning about jobs, for learning consumer behavior, and for learning how to make their own decisions, and for learning appropriate social behavior. A number of changes, such as the imaginative "apartment living" residency program, have been made in recent years, and more such efforts to broaden students awareness and skill in personal responsibility should be encouraged.

The school has a separately designated "vocational" department. Its curriculum is described in a separate project report. It should be noted, however, that development of the vocational program has been hampered by extremely high turnover among supervising teachers.

THE VOCATIONAL DEPARTMENT AT
OREGON STATE SCHOOL FOR THE DEAF

by H.W. Barkuloo

PHILOSOPHY OF VOCATIONAL EDUCATION

At the point in time when interviews with faculty members and administrators were conducted, there was no discernible philosophy of vocational education which was understood by all. Individual teachers and administrators had personal concepts of what vocational education for deaf students should be, but there was no evidence that any two people, including administrators, had agreed on what the philosophy should be.

A three track system exists in reality, but not as official policy (at least not recognized as such by the teachers) at the Oregon School. The three groups are roughly identified as the college-bound (Gallaudet), the average, and the slow learners.

Entry into the Vocational Department is primarily for the latter two groups. The administrative decision to have the identified "college-bound" student take predominantly academic classes constitutes the greatest difference in the philosophies expressed by teachers and by administrators. The teachers contend that first, even a Gallaudet graduate must earn a living, and second, many who go to Gallaudet do not graduate and should have a work skill.

There seems to be agreement that the other two tracks should spend considerable time in the Vocational Department. However, no program has been developed for these students which is goal-oriented.

The attitude of the administrative staff toward the "college-bound" and the acceptance (not necessarily agreement) of this attitude by the vocational teachers expresses a common attitude found within the residential system: vocational equates with work, not with the broad educational process.

For slow learners there seems to be general agreement that school, in conjunction with the Salem Rehabilitation Facility, should constitute

a terminal training facility. This process has not been fully thought out, however. The Salem Rehabilitation Facility has been used successfully with a few students.

ENTRY PROCEDURES

With one exception (Key Punch) there is no consultation between teacher and administration in the assigning of students to classes. The decision is made by the Principal and the Supervising Teacher and the teacher accepts the students assigned. This procedure results in the following basic complaints by the teachers:

1. It is difficult if not impossible to develop long-range curriculum resulting in job-entry levels when there is no guarantee of students returning the next year.
2. Components of a given curriculum considered essential for all students regardless of academic ability are omitted. (e.g., Preparation for Marriage.)
3. In vocational areas which serve as production centers for the school, particularly printing, the quality of the student, plus the production requirement results in very little teaching.

EVALUATION AND TESTING

No formal evaluation or testing procedure is involved in the entry procedure with the exception of Key Punch where tests designed by IBM are used. As a group, the teachers did not see the need for testing as part of the entry procedure. Although the teachers indicated that the students' files were open to them, they did not indicate that they looked at individual files. This apparent lack of interest may be due to the fact that they generally must accept any student assigned to them, regardless of ability or interest. Only one teacher indicated awareness that the General Aptitude Test Battery was given to students and this teacher had never seen the results of this test.

COUNSELING

There is no vocational counseling carried on by the school staff. For the past four years, selected teachers were given free time to counsel

with students concerning both personal and vocational problems. According to the administration, economies in the budget have forced the school to cancel this portion of the school program. The Dean of Students, who has been available for counseling, has also been acting as Supervising Teacher of the high school during the past school year. While he will relinquish this portion of his duties during the 1970-71 school year and concentrate on his responsibilities as Dean, he will also be teaching part time and will be responsible for disciplinary action within the dormitories. Although only one of the teachers was more than casually aware of the fact, Mrs. Lois Tollefson, the State Vocational Rehabilitation officer assigned to the School has met with each high school student once during the year and is on campus twice weekly to confer with the students. These meetings have involved personal as well as vocational counseling.

ACADEMIC COMPONENTS OF VOCATIONAL EDUCATION

All but one of the teachers indicated that they spend some time each day teaching about the subject area. Estimates of time spent in teaching ranged from 10% to 40%. One teacher who said that academic teaching was carried on, did so only with the "bright" students. Another teacher said that he was told that he was not to assign homework from the vocational class on the basis that it had never been done in the past.

Only one of the teachers indicated that "job information" pertinent to the vocational area was taught and this pertained only to the one area in which this teacher has achieved success in training students to a job-entry level.

No consistent communication with the rest of the faculty (academic) is indicated, although with one exception, the vocational teachers indicated that they felt free to communicate problems to the academic teachers.

Field trips are not generally conducted with only two teachers indicating that they used this method of introducing students to industry.

School production is carried on by all of the vocational classes, but, with one exception, this is not resented by the teachers and does not, in the teacher's opinion, interfere with the operation of the class. In the class (Printing) in which production does interfere with education, the interference is complete. The teacher, in his opinion, has not time for

anything except production. While an analysis of student assignment will be made later, it is interesting to note that, while this particular vocational area would require the highest degree of language competence, only one group of six students with a measured reading level of sixth grade or above has been assigned to this teacher. One group of eight students assigned to this class shows a measured reading level of third grade.

PLACEMENT AND FOLLOW-UP

There has been an on-the-job training program for the past three or four years, which has apparently been quite successful. At the present time, however, this program seems to be disorganized—no students were involved in off-campus training during the past year.

Mrs. Tollefson is active in securing summer placement for students and, when off-campus, on-the-job placement is made, she follows the progress of the student.

Unless directly assigned to the on-the-job program, teachers are unaware of its functions and say that they are not consulted concerning students with whom they have had previous experience.

During the past five years, placement in jobs where the skills have been learned within the on-going vocational programs at the school has been primarily limited to the business department where nine girls have been successfully placed in key punch jobs.

EQUIPMENT AND FACILITIES

In general, the teachers are satisfied with the equipment and facilities which they have, but some new equipment is needed if more vocational emphasis was coming. A listing of equipment needed is made in another section of this report.

STUDENT-TEACHER CONCEPT OF THE VOCATIONAL CLASS

With some exceptions, notably key punch and the foods section of the homemaking class, the teachers feel that the students view the vocational department as "work" and not class. As noted earlier, the administra-

tion shares this view.

The teachers feel that they are equal in status to the academic teachers and expressed loyalty to the administration.

ANALYSIS OF THE STUDENTS ASSIGNED TO THE VOCATIONAL DEPARTMENT

Although there were some exceptions, notably one class of boys assigned for a two-period block in printing and a few girls in the business department, the students assigned to the Department appear to be those with low abilities. Class schedules also indicate that the same group of students are repeatedly assigned to the Vocational Department with some students having classes in four different areas. Adding Physical Education to the schedule leaves two fifty-minute periods a day in which these students are assigned to "academic" classes. Sixty-five of the 79 students taking vocational classes had reading levels, as measured by the Stanford Achievement Test, of below sixth grade, 50 were below fifth-grade reading levels, and 38 had reading levels below fourth grade.

EQUIPMENT NEEDS AS EXPRESSED BY TEACHERS

Printing:	Automatic Folding Machine Automatic Stapling Machine Addressograph Waxer Ludlow Type Casting Machine Film Processor
Business:	IBM Selectric Typewriters (2)
Woodworking:	A Fire Control System is listed as urgently needed. Wood Lathes (the present lathes are dangerous and Mr. Plyler is not using them)
Homemaking:	Treadle Sewing Machines should be replaced with modern machines.
Metals:	Tool Grinder (Mr. Klempel is using his own) D.C. Welder Bender Various Hand Tools

EMPLOYMENT OPPORTUNITIES FOR THE DEAF
by Paul Kerr, Occupational Analysis Unit
State of Oregon Employment Division

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Introduction

The Occupational Analysis Unit of the Oregon State Employment Service, Employment Division, was assigned the development of occupational clusters. These clusters were to relate to jobs that offer the deaf the greatest opportunity for employment, that represent work to which the deaf could best adjust; and which would follow some of the more acceptable approaches to clustering for curriculum development and vocational exploration, as established by Educators.

The first project component involved obtaining information about labor market opportunities. This consisted of a review and analysis of the Manpower Resource of the State of Oregon (State of Oregon Employment Division), along with basic research data used in that publication, as well as the results of other available surveys.

In addition it was the intention of the analysts to identify (a) occupations in which deafness is not a serious handicap; and (b) occupations in which deafness may be an advantage. First, an analysis was made of occupations where the physical demands do not include speaking and hearing as significant parts of the job tasks and where the total expansion and replacement needs from 1970 to 1975 represent 25 or more workers. In addition to the information on labor market opportunities, the Dictionary of Occupational Titles (DOT), Vol. I, II, and a Supplement to the DOT were used. In the clusters developed this review is found in a volume labeled "Analysis DOT."

Second, an Employer Survey was undertaken in 87 companies, hospitals, stores, and state and local governments involving 77 different industries (using the SIC code). Of these industries 62 were manufacturing and 15 non-manufacturing. In all,

information was obtained for 511 separate job titles.

In addition to getting information on general education development, specific vocational preparation, and a brief job description, information was also obtained on whether deafness would be an advantage, and whether ability to read lips and to speak were required. Occupations held by this group come under the title of "Employer Survey," in the cluster tables.

A final study was made in the form of a review and analysis of the survey of the work experience of the deaf in Oregon, now nearing completion by the Special Schools Division. The following information was obtained on 288 persons: Name, Age of Respondent, Sex of Respondent, DOT code and Title of present job, hours worked per week, duration of present job, nature of previous jobs, relationship of previous jobs to present job, the duration of previous jobs, and reading achievement level of the respondent. Information was also received from the School for the Deaf on recent deaf graduates. Occupations held by these groups fall under the title of "Employed Deaf," in the cluster tables. An asterisk differentiates the recent graduates from the other survey.

The second component of the study consisted of developing occupational clusters. These clusters were based on the previous work, on information concerning present and projected training programs and facilities at O.S.S.D., as well as reference materials from a wide source. Two publications from the Oregon Board of Education were of help: Career Education in Oregon and Guide to Structure and Articulation of Occupational Education Programs.¹ Vocational Education and Occupations² was also of especial help. The specific clusters are discussed below.

Occupations listed under "Employed Deaf" and the "Employer Survey" do not necessarily indicate expansion and replacement needs of 25 or more workers from 1970 to 1975. This needs column is frequently no more than an approximation.

Following the clusters, information will be given concerning; (1) a key to figures used; (2) an explanation of G.E.D.; (3) the relationship of the G.E.D. level to the reading achievement level of the adult deaf; (4) an explanation of the S.V.P.

Following this, research material developed through analysis of the various other survey items will be offered.

¹Oregon Board of Education

²Office of Education, U.S. Department of Health, Education and Welfare. Manpower Administration, U.S. Department of Labor.

Relationship of Occupational Clusters to
Career Preparation Curriculum

The following occupational clusters are divided into five groups. Each cluster group will be considered in sequence.

Occupational Clusters
Group I

This first cluster group relates to career cluster programs being considered for immediate development. It consists of the following clusters:

- A. Graphic Arts: This cluster contains all of the Printing occupations and the two Commercial Art occupations from the surveys as well as those occupations more generally considered Graphic Arts. Analysis seemed to indicate that all these occupations shared certain common elements. This cluster is strongly represented in all three surveys.
- B. Office Occupations: This clerical non-professional cluster has been divided into three further groups of occupations. Business Data Processing is first. Occupations range from Key Punch Operator to Digital Computer Operator. Certain features of this group are uniquely its own, although the relationship to occupations in the next General Clerical group (as Typist and Bookkeeping Machine Operator) are obvious. The General Clerical Group involves computing (including the Bookkeeping occupations), filing, recording, checking, and office machines (which also includes the typewriter). The last group is labeled Storing, Inspecting, Classifying, and Checking. This last group minus Storing has also been treated separately in a cluster of its own. The only occupations listed here are those that are clearly office-clerical. Various Related and Entry occupations have been added. This cluster, as well as the first, was felt in the study reports to be complementary to developing career cluster programs, utilizing the present "Vocational" Department.

The entire cluster of jobs is strongly represented in the Employer Survey and DOT Analysis Survey. In the Employed Deaf Survey, Data Processing is strongly and almost entirely represented by Key Punch. General Clerical is very sparsely represented and should be an important area for job training and development. Storing, Inspecting, Classifying, and Checking is moderately represented.

- C. Building and Grounds Maintenance well represented in all three surveys would utilize "Other School Resources." It could be related to a Homemaking program.
- D. Quantity Food Occupations and Related (originally called Food Service): This cluster is divided into Food Service and Related Processing, and Agricultural Products (Food Processing). Both cluster groups are strongly job represented in the Employer Survey; moderately represented in the Analysis and very lightly represented in the Employed Deaf Survey. Almost all those employed in Food Service Occupations are in low level entry jobs (Dishwasher, Kitchen Helper, etc.) which may indicate that speaking-hearing may be a more important aspect of these jobs than the employers are aware. Agricultural Products (Processing) is represented by the Deaf almost entirely in the seasonally, essentially entry, job of Cannery Worker.

The entry jobs of this cluster could be suitable for EMR Deaf. This cluster should require further study.

Quantity Food Occupations cluster would utilize "Other School Resources;" it is related to the "Homemaking" program.

- E. Education and Social Service Occupations: This cluster is in Group I because it is strongly related to O.S.S.D. All the occupations are heavily represented in the Deaf Survey. The limitations are shown by the lack of representation in the other two surveys. All persons in the Deaf Survey work with the Deaf. We have stated that training could be coupled with "practical learning experiences such as assisting teachers and dormitory counselors in various ways including working with other students."
- F. Home Economics: This fits in with "Homemaking." Not all possible occupations have been included. We refer, for example, to the Machine Operating Controlling N.E.C. for the production Sewing Machine Operators and to Education and Social Service for Housemother.

GRAPHIC ARTS OCCUPATIONS

These occupations involve organized, specialized learning experiences which include theory, laboratory, and shop work as they relate to all phases of hot and cold typesetting, layout, composition, presswork, and binding, including flexography, lithography, photoengraving, and other graphic arts related to the printing industry. Emphasis is on typographical layouts and design, hand and machine typesetting, camera and plate work, imposition, typecasting, offset and platen press makeup and operation, papercutting, ink and color preparation, binding, and production by silk screen process.

Instruction related commercial art occupations emphasizes the creation and reproduction of commercial and industrial designs involving adherence to technical requirements or functional limitations specified by the client or employer.

Craftsmanship training emphasizes the acquisition and application of an organized body of knowledge concerned with typographical layout and design, typesetting, camera and plate work, and press makeup and operation.

Machine operating training emphasizes setting up, starting, adjusting, watching, stopping printing presses, and other machines, and verifying adherence to specifications.

Manual and manipulative instruction emphasizes the dexterous use of hands, hand tools, or special devices to carry out binding, book repairing, or other procedures related to graphic art work.

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DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
CRAFTSMANSHIP AND RELATED OCCUPATIONS							
970.281	Photograph Retoucher	3	6			x(1)	5
971.381	Photoengraver	3	8		x		25
972.381	Transferrer I	4	8		x		30
973.381	Compositor	4	8		x	x(1)	85
976.381	Developer	4	7		x	x(1)	53
976.381	Projection Printer	3	7		x		25
979.381	Paste-Up Man	4	8		x		25
972.382	Photographer, Lithographic	4	7	x(2)		x(1)	20
650.582	Linotype Operator	4	5	x(1)	x	x(6)	39
MACHINE OPERATING							
651.782	Check Imprinter	4	7	x(1)			(
651.782	Cylinder Pressman	4	7		x		58
651.782	Offset Pressman	4	7	x(1)	x	x(1)	85
652.782	Box Printer	3	4	x(1)			4
979.782	Blueprinting Machine Operator	3	5	x(1)			25

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
<u>MANUAL AND MANIPULATIVE OCCUPATIONS</u>							
977.884	Bookbinder	3	6		x		{
977.884	Book Repairer	2	3	x(1)			65
643.885	Bindery Workers	2	4	x(3)	x	x(1)	70
976.885	Print Developer, Machine	2	3	x(1)			7
<u>RELATED OCCUPATIONS (COMMERCIAL ART)</u>							
141.081.	Lay-Out Man	5	8		x		47
141.081	Illustrator	5	7	x(2)	x		30
<u>ENTRY OCCUPATIONS</u>							
651.885	Offset Press Operator II	2	2	x(1)			20
976.886	Photograph Finisher I	2	2		x		25
979.886	Print Shop Helper	2	2			x(1)	70

OFFICE OCCUPATIONS (NON-PROFESSIONAL, CLERICAL)

Business Data Processing training is concerned with procedures and operation of automated data processing and other related equipment. Training emphasizes procedures involved in setting up, adjusting, and operating computers, peripheral equipment or other related machines such as key punches and verifiers.

General Clerical training emphasizes a combination of courses and practical experiences to develop a knowledge of systems and reports, including copying data, compiling records and reports, tabulating and posting data in record books, providing information, operating office machines, and handling mail and correspondence.

Related machine operating and tending instruction emphasizes operation and procedures utilizing one or more specialized office machines for duplicating, listing, and mechanizing data. On-the-job training is a predominant feature.

Storing, inspecting, classifying, and checking training emphasizes a combination of courses and practical experiences concerned with receiving, storing, issuing, shipping, requisitioning, and accounting for stores of material; assigning locations and space; verification of quality, condition, and value; preparing stocks for shipment; inventorying stock; filling orders; and issuing tools, equipment, or materials to workers. Training in these occupations is commonly on-the-job.

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DOT CODE DOT TITLE

A. BUSINESS DATA PROCESSING

	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
213.382	3	4	x(1)			25
213.382	4	6	x(1)			36
213.582	3	4	x(11)	x	x(16)*(8)	999
234.582	3	4	x(1)			69
213.588	3	5			x(2)	34

B. GENERAL CLERICAL (COMPUTING, FILING, RECORDING, CHECKING, OFFICE MACHINES)

206.388	3	3	x(3)	x		494
209.388	3	4	x(3)			1964
210.388	4	3	x(1)	x	x(1)	3248
210.388	3	5		x		43
215.388	4	5		x	x(1)	260
217.388	3	4		x		325
219.388	4	5	x(1)			220
219.388	4	4	x(1)			1600
219.388	3	4		x	x(2)	270
219.388	4	4			x(1)	15
221.388	3	4	x(1)	x		65

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
<u>B. GENERAL CLERICAL (COMPUTING, FILING, RECORDING, CHECKING, OFFICE MACHINES) (Cont'd.)</u>							
233.388	Mail Carrier	3	3		x		629
209.488	Invoice Control Clerk	4	5	x(1)			26
214.488	Billing Machine Operator	3	4		x		36
216.488	Adding Machine Operator	3	3	x(1)			30
215.488	Calculating Machine Operator	3	3	x(1)	x		49
215.488	Payroll Clerk	4	5		x		153
219.488	Accounting Clerk	3	3	x(4)	x		703
219.488	Insurance Checker	3	5		x		42
203.588	Typist	3	3	x(2)	x	x(1)	423
209.588	Clerk, General	3	3	x(2)	x	x(1)	2101
209.688	Proof Reader	3	4	x(2)	x		30
231.688	Distribution Clerk	3	4		x		138
<u>RELATED GENERAL CLERICAL OCCUPATIONS</u>							
231.588	Mail Clerk	3	2	x(1)	x		191
239.588	Meter Reader	3	4	x(2)	x		45
<u>RELATED MACHINE OPERATING AND TENDING</u>							
207.782	Offset-Duplicating Machine Operator	3	5	x(1)	x	x(2)	41
208.782	Ticket Machine Operator	3	4	x(1)			4
213.782	Tabulating Machine Operator	3	5		x		86
207.885	Photographic Machine Operator	3	3	x(1)			41
<u>ENTRY OCCUPATIONS (GENERAL CLERICAL)</u>							
223.588	Tallyman	2	2	x(1)			28
230.878	Messenger	2	2	x(2)	x		65

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
<u>C. STORING, INSPECTING, CLASSIFYING, CHECKING</u>							
222.387	Shipping and Receiving Clerk	3	5	x(1)			69
223.387	Stock Clerk	3	5	x(2)	x	x(3)	502
223.387	Parts Clerk	3	5	x(1)		x(1)	45
222.587	Shipping Clerk II	3	3	x(2)	x	x(1)	275
239.587	Mailer	2	3	x(1)	x		42
222.687	Receiving Checker	3	3	x(2)			28
<u>ENTRY OCCUPATIONS</u>							
222.687	Sorter	2	2			x(2)	10

BUILDING AND GROUNDS MAINTENANCE OCCUPATIONS

Craftsmanship training emphasizes a variety of activities such as estimating, cutting, fitting, fastening, and finishing various materials; the use of a variety of hand and power tools; reading blueprints and technical specifications; and knowledge concerning the physical properties of materials.

Training in manipulative and related occupations (including Entry) emphasizes the principles and practices involved in locating, planting, and maintaining turf, plants, shrubs, or other devices for the beautification of grounds; and the use and care of hand and power tools for such operations; dusting, mopping, scrubbing, waxing, and refinishing; the cleaning of windows and walls; the characteristics of various cleaning agents and protective coatings, sanitation and disinfectants, scheduling work, and purchasing custodial supplies. On-the-job training along with related classroom work is the usual method of developing the knowledge, skills, and abilities of these occupations.

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
<u>CRAFTSMANSHIP (BUILDING MAINTENANCE)</u>							
899.381	Maintenance Man, Building **	4	7	x(3)	x	x(1)	633
<u>MANIPULATIVE OCCUPATIONS</u>							
407.883	Greenskeeper (any ind.) II	2	3		x		93
382.884	Janitor I	3	3	x(5)	x	x(2)	3027
407.884	Groundskeeper (any ind.)	2	3	x(2)	x	x(1)*(1)	259
<u>RELATED OCCUPATIONS</u>							
372.868	Watchman I	3	2	x(1)	x		246
404.884	Tree Pruner (agric.)	3	4	x(1)			Est.10
406.887	Nursery Worker	2	3			x(1)	87
<u>ENTRY JOBS</u>							
381.887	Porter I	2	2	x(4)	x	x(3)*(1)	(1925
381.887	Porter II	2	2	x(10)	x		(
381.887	Charwoman	2	2	x(1)	x	x(1)	681
381.887	Cleaner, Laboratory Equipment	2	2		x		54

**Maintenance Man, Building, also listed under Construction Occupations.

QUANTITY FOOD OCCUPATIONS AND RELATED

Food service instruction emphasizes quantity food service activities in commercial food service establishments such as restaurants, cafeterias, bakeries, and meat markets.

Agricultural products processing training emphasizes the principles, methods, and procedures involved in preparing agricultural products for other processors or for sale. Emphasis is given to on-the-job experience to develop skills, knowledge, and abilities.

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
<u>FOOD SERVICE AND RELATED PROCESSING</u>							
313.381	Cook, School-Cafeteria	3	6	x(2)	x	x(1)	Est.200
315.381	Cook, Institution	3	7	x(1)			25
524.381	Cake Decorator	4	6	x(2)			59
529.381	Candy Maker	4	8	x(2)			14
313.781	Baker (hotel & rest.)	3	7	x(1)			25
526.781	Baker (bake. prod.)	3	7	x(1)	x	*(1)	73
526.782	Cook, Kettle	3	5	x(1)			20
311.878	Counter Girl, Cafeteria	2	3	x(1)			100
311.878	Floor Girl, Cafeteria	3	3	x(1)			10
311.878	Busboy	2	2	x(1)			645
355.878	Tray Line Worker	3	2	x(1)	x		107
316.884	Meatcutter	3	6		x		386
317.884	Pantryman	3	6	x(1)	x		174
317.884	Sandwich Girl	2	4			x(1)	28
524.884	Cake Icer	4	6	x(1)			10
524.884	Dipper, Hand	2	5	x(1)			10
524.884	Enrobing Machine Corder	2	4	x(1)			10
520.885	Pie Filling Mixer	3	3	x(1)			20
524.885	Enrobing Machine Operator	3	6	x(1)			10
526.885	Pizza Maker Assembly Line	2	2	x(1)			5
526.885	Pie Maker, Machine	3	4	x(1)			20
323.887	Houseman, Banquet	2	3	x(1)	x		101
<u>PROBABLE ENTRY OCCUPATIONS</u>							
526.886	Baker Helper	2	2	x(2)	x	x(1)	95
929.886	Laborer, Bakery	1	2		x		5
317.887	Cook Helper	2	3 or 2		x	x(2)	514
318.887	Dishwasher, Machine	1	2	x(3)		x(1)	(
318.887	Kitchen Helper	1	2	x(5)		x(3)	1900

DOT CODE DOT TITLE

AGRICULTURE PRODUCTS (FOOD PROCESSING)

529.687 Egg Candler
522.782 Cottage Cheese Maker
529.782 Freezerman
525.884 Butcher, Fish
520.885 Sausage Stuffer

ENTRY OCCUPATIONS

529.687 Sorter, Agricultural Produce
525.884 Crab Shaker
525.884 Crab Butcher
525.884 Fish Cleaner
525.884 Skinner
529.886 Production Helper (Produce Supply Man)
529.886 Cannery Worker
529.886 Laborer, Shellfish Processing
529.886 Shrimp Picker
529.886 Laborer, Cheesemaking
525.887 Smoked Meat Preparer
521.887 Shellfish Schucker

<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
3	2			x(1)	15
3	4	x(2)			5
3	5	x(1)			16
3	2		x		42
3	3	x(1)			16
1	2		x		54
2	2	x(1)			10
1	2	x(1)			10
2	2		x		45
2	2		x		25
1	2	x(1)			30
1	1	x(1)		x(5)	1037
2	2	x(1)			25
2	2	x(1)		x(1)	25
2	2		x		46
2	2	x(2)			8
2	3			x(1)	13

EDUCATION AND SOCIAL SERVICE OCCUPATIONS

Instruction in Education and Social Service Occupations is concerned with the acquisition and application of knowledge and techniques in a specific area of specialization. Training emphasizes basic academic preparation coupled with practical learning experiences such as assisting teachers and dormitory counselors in various ways including working with other students as directed. Preparation for various kinds of employment relating to institutional and home management services may be helpful (see Home Economics cluster).

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
045.108	Residence Counselor	5	7			x(1)	130
187.138	Housemother	3	6			x(5)	40
094.228	Teacher, Deaf	5	7			x(27)	18
097.228	Instructor, Vocational Ed.	4	7			x(3)	733

HOME ECONOMICS OCCUPATIONS

Instruction in Home Economics emphasizes the acquisition of knowledge and the development of understandings, attitudes and skills, relevant to personal, home, and family and institutional life. Content derives from a combination of areas including child development, clothing, consumer education, health, family relations, food preparation and nutrition, and home management and furnishing.

Instruction in Related Occupations emphasizes the acquisition of knowledge and the development of skills necessary to provide for the physical appearance, cleanliness, and health of hair, scalp, and nails of individuals.

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
313.381	Cook, School Cafeteria*	3	6		x		Est.200 (see also Quantity Food Occup.)
785.878	Seamstress and Tailor	3	6		x		147
306.878	Maid, General	3	3			x(1)	83
307.878	Nursemaid	3	2			x(3)	30
355.878	Child Care Attendant, School	3	2			x(1)	10
301.887	Day Worker	2	2			x(2)	
323.887	Maid II	2	2	x(1)	x	x(2)	1309
323.887	Houseman	2	3	x(1)	x		101
323.887	Maid, Hospital	2	2	x(2)	x	x(1)	253
<u>RELATED OCCUPATIONS: PERSONAL SERVICE</u>							
332.271	Cosmetologist	4	6		x		870
332.271	Hair Stylist	4	6		x		45
330.371	Barber	3	5		x		194

For Sewing Machine Operators (a production occupation) see Machine Operating - Controlling, N.E.C.

For Housemother see Education and Social Service cluster.

*Also in quantity Food Occupation

Occupational Clusters
Group II

This cluster group consists of certain Professional, Technical, Managerial occupations. Most require two to four or more years of college. Academic work for many occupations here is important. Following is a list of the clusters:

- A. Physical and Life Sciences Occupations.
- B. Engineering and Engineering Technician Occupations.
- C. Business Relations.

All three clusters are highly representative of professional, technical, and managerial occupations in which the deaf feel they can do best. Even though the Physical and Life Sciences occupational cluster has only one person from the Employed Deaf Survey in Oregon, occupations in this cluster are well represented in the nationwide survey of Occupational Conditions Among the Deaf³ and in Deaf Persons in Professional Employment⁴

³Anders S. Lunde and Stanley K. Bigman, Occupational Conditions Among the Deaf, (Kendall Greene, Gallaudet College, Washington 2 D.C., 1959)

⁴Alan B. Cramatte, Deaf Persons in Professional Employment, (Charles C. Thomas, Springfield, Illinois: 1968)

PHYSICAL AND LIFE SCIENCES OCCUPATIONS

Instruction in the physical and life sciences occupations emphasizes mathematics and such courses as chemistry, biology, and physics. A bachelor's degree with a major in the specialty area is the minimum requirement for entry into full-fledged scientific work. Advanced degrees are important for entry into many jobs and for advancement.

Scientific support training emphasizes courses in mathematics, engineering, chemistry, or physics. Some of these occupations require the worker to have a bachelor's degree and be licensed.

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
<u>SCIENTIFIC SUPPORT OCCUPATIONS</u>							
022.081	Chemist, Inorganic	6	8		x		32
024.081	Geologist	6	8		x		38
040.081	Soil Scientist	6	8		x		33
041.081	Aquatic Biologist	5	8		x		27
041.081	Biochemist	6	8		x		27
041.081	Cytologist	6	8			x(1)	5
<u>SCIENTIFIC SUPPORT OCCUPATIONS</u>							
022.281	Chemical Laboratory Technician	5	7	x(1)			24
029.281	Laboratory Tester I	4	5		x		222
074.181	Pharmacist	5	7		x		126
078.281	Medical Technologist	5	7	x(1)	x		185
<u>POSSIBLE OCCUPATION</u>							
073.108	Veterinarian	5	8		x		47

CAREER EXPLORATION OPPORTUNITIES

Career direction in physical and life sciences is concerned with the early discovery and development of interest, talents, and discipline required for successful entry into these occupations.

Career exploration emphasizes such activities as collecting or experimenting with ants, algae, fish, reptiles, field trips to observe native flora and fauna; preparing chemical compounds; experimenting with electric, physics, and chemistry sets; touring scientific facilities; carrying out projects demonstrating principles of biology; and preparing exhibits and exhibiting them at science fairs.

ENGINEERING AND ENGINEERING TECHNICIAN OCCUPATIONS

A bachelor's degree is usually the minimum requirement for entry into engineering positions. For admission to an undergraduate program, engineering schools usually require high school courses in mathematics and the physical sciences and place emphasis on the general quality of the applicant's high school work.

Engineering Support instruction emphasizes courses in mathematics, physical sciences, mechanical drawing, lettering and tracing. Graduation from a technical or vocational school or a specialized program in a junior college or university are usually required for entry into engineering support occupations.

The basis of many of the Engineering Support occupations listed is Drafting. Specific drafting instruction provides experience in the use of reproduction materials and equipment; the development of plan and process charts and drawings; and the development of models.

DOT CODE	DOT TITLE	CED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
ENGINEERING OCCUPATIONS							
005.081	Highway Engineer	5	8	x(1)			Est.200
005.081	Civil Engineer, N.E.C.	5	8		x		365
007.081	Mechanical Engineer, N.E.C.	6	8		x		483
ENGINEERING SUPPORT OCCUPATIONS							
003.181	Electronics Technician	4	7		x		190
003.181	Electrical Technician	5	7			x(1)	19
007.181	Mechanical Engineering Technician	5	6	x(1)	x		27
007.181	Engineering Assistant, Mechanical Equipment	5	7		x		30
003.281	Draftsman, Electronics	5	7	x(2)			71
003.281	Draftsman, Electrical	5	7			x(1)	105
005.281	Draftsman, Civil	5	7	x(2)	x		683
017.281	Draftsman, Map	5	7			x(1)	21
019.281	Quality Control Technician (profess. & kin.)	5	7			x(1)	20

BUSINESS RELATIVES (PROFESSIONAL, TECHNICAL, MANAGERIAL)

Accounting instruction emphasizes the study and application of accounting principles, business arithmetic, computing discounts, financial records such as profit and loss statements, balance sheets, cost studies tax reports, and the operation of office machines such as calculators, and accounting or bookkeeping machines.

Instruction in managerial and administrative specialties emphasizes the study of principles, practices, and techniques of analysis, planning, organization, and control of business operations. Learning experiences in the practical application of principles and techniques appropriate to the specialty area are provided through participation in the planning, organization, and control of special school projects or assisting with various school planning, administration, and control functions.

Commercial Art instruction emphasizes the study of principles and practices in one of the specialty areas. Practical learning experiences are provided through participation in various school functions, events, and activities. Instruction includes advertising theory and preparation of copy, lettering, poster design, fashion illustration, silk screen, air brush and touch up, inks and color dynamics, package and product design, drawings for line and half-tone reproduction, and other display devices and exhibits.

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
<u>A. ACCOUNTING AND STATISTICAL ANALYSIS OCCUPATIONS</u>							
020.188	Programmer, Business	5	7	x(1)			288
020.188	Statistician, Business & Economics	5	7	x(1)			5
160.188	Accountant	5	8	x(1)	x	x(1)	858
160.188	Accountant, Cost	5	8		x		88
160.188	Accountant, Tax	5	8		x		91
160.188	Auditor	5	8		x	x(1)	345
160.288	Estimator	5	7		x		135
<u>B. MANAGERIAL WORK, ADMINISTRATIVE SPECIALITIES AND RELATED</u>							
162.158	Buyer II	4	7	x(1)			209
100.168	Librarian, Reference Library	5	7			x(2)	8
169.168	Administrative Assistant	5	8			x(1)	239
<u>ENTRY OCCUPATIONS (CUSTOMER SERVICE)</u>							
240.368	Collector	3	4		x		72
249.368	Library Assistant	3	4	x(1)			230
<u>C. COMMERCIAL ART OCCUPATIONS</u>							
142.051	Interior Designer and Decorator	5	7		x		35
141.081	Illustrator*	5	7		x		30
142.081	Floral Designers	5	7		x	x(1)	206
298.081	Displayman	4	5		x		52

*See also Graphic Arts.

Occupational Clusters
Group III

These three clusters might still be considered for immediate objectives as, for example, Metal Working occupations. They should be definitely considered in the Long Range objectives; and then, of course, they will be a part of occupational exploration. The clusters follow:

- A. Wood Products: A strong cluster, especially in areas of Craftsmanship and All Around Machine Operating and Machine Operating, Controlling, and Driving.
- B. Metal Working Occupations: Another strong cluster. Particularly good in Sheet Metal and Automobile Body Repairman. Nationally, the best occupation here would be Machinist (see Occupational Conditions Among the Deaf). Has good stability.
- C. Electricity - Electronics Occupations: Strong in Employer Survey. Has some potential. Occupation with greatest need to 1975 is Electrician. So far Electrician has turned out to be a very doubtful occupation for the deaf. Only a few have so far been able to get into this occupation nationally.

WOOD PRODUCTS OCCUPATIONS

Craftsmanship training emphasizes laying out and shaping stock, assembling parts by means of hand tools and woodworking machines; refinishing furniture, installing hardware, blueprint reading; and characteristics of various kinds of wood.

Machine operating training emphasizes selecting and installing tools and holding devices, observing the functioning of the machine and making necessary adjustments to allow for variables, such as flow of materials, and angles of cut; and verifying accuracy of work with measuring devices and gauges.

Inspecting-Testing training emphasizes the application of arithmetic computation and related recording and the characteristics of products examined for the purpose of grading, sorting, detecting flaws, or verifying adherence to specifications.

Manual and manipulative instructions emphasizes on-the-job use of hands, hand tools, or special devices to work, move, guide, or place objects or materials; for machine tending jobs training includes operational procedures and minor adjustments.

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
<u>CRAFTSMANSHIP AND ALL AROUND MACHINE OPERATING</u>							
660.280	Cabinet Maker	4	6		x	x(2)	251
661.281	Pattermaker, Wood	4	8		x	x(1)	31
563.381	Kiln Operator	4	7			x(1)	9
701.381	Saw Filer	3	6		x		41
763.381	Furniture Finisher	4	7			x(1)	28
780.381	Furniture Upholsterer	4	7		x		28
<u>MACHINE OPERATING - CONTROLLING - DRIVING</u>							
662.782	Stroke-Belt-Sander Operator	3	4	x(1)			1
663.782	Veneer Lathe Operator	3	4		x		55
664.782	Swing Type Lathe Operator	3	4	x(1)			4
666.782	Boring Machine Operator	4	4	x(1)			8
667.782	Swinging Cut-Off Saw Operator	3	4	x(1)			
667.782	Band-Scroll Saw Operator	3	5	x(1)			8
667.782	Edgerman	3	6		x		43
667.782	Stock Cutter	3	4			x(1)	2
667.782	Ripsaw Operator	3	4			x(1)	
667.782	Cut-Off-Saw Operator	3	4	x(1)			103
667.782	Sawmill Worker	3	4		x		84
667.782	Trimmerman	3	6			x(6)*(1)	
669.782	Glue-Jointer Operator	3	4		x	x(3)	
669.782	Woodworking Machine Operator	4	4	x(1)			(
664.883	Lathe Spotter	4	4	x(1)	x	x(4)	177
		2	3		x		42

DOT CODE DOT TITLE

MACHINE OPERATING - CONTROLLING - DRIVING (Cont'd.)

929.883 Logging Tractor Operator

INSPECTING - TESTING OCCUPATIONS

669.587 Grader

721.687 Veneer Matcher

941.488 Log Scaler

MANUAL AND MANIPULATIVE OCCUPATIONS

760.884 Box Maker, Wood

761.884 Plywood Patcher, Hand

762.884 Nailor, Hand

763.884 Furniture Assembler

940.884 Fallers

563.885 Hot-Plate-Plywood-Fress Operator

569.885 Glue Spreader, Veneer

569.885 Edge Gluer

569.885 Veneer Taper

663.885 Chipperman, Automatic

663.885 Veneer Clipper

663.885 Slicing Machine Operator

667.885 Shingle Sawyer

ENTRY OCCUPATIONS

761.884 Sander, Machine

563.885 Veneer Drier

569.885 Stacker, Machine

667.885 Bandsaw Operator

667.885 Cut-Off Sawyer, Log

668.885 Chipperman, Log

669.885 Raimann Machine Operator

563.886 Drier Feeder

662.886 Veneer Sander Feeder

667.886 Veneer Fishtail Saw Operator

669.886 Woodworking Machine Feeder

669.886 Molder Feeder

669.886 Chainman

921.886 Pondman

<u>GED</u>	<u>SVP</u>	<u>EMPLOYER</u> <u>SURVEY</u>	<u>ANALYSIS</u> <u>(D.O.T.)</u>	<u>EMPLOYED</u> <u>DEAF</u> <u>SURVEY</u>	<u>NEEDS TO</u> <u>1975</u>
3	5		x		29
3	4		x		469
3	4		x	x(1)	6
3	3		x		285
3	3		x		97
2	3	x(1)	x	x(1)	229
2	3	x(1)	x		Est25
3	4	x(2)	x		195
2	5		x		33
2	4	x(1)	x		58
2	3	x(2)	x	x(1)	46
2	3		x		42
3	4		x		36
3	4	x(1)	x		28
2	4	x(1)	x		82
2	3	x(1)	x		INA
3	4		x		28
1	2		x	x(6)	90
2	2	x(1)	x		150
2	2	x(1)			12
2	2	x(1)			INA
2	2		x	x(1)	27
2	2		x	x(2)	23
2	2	x(1)			170
1	1	x(1)			Est.100
2	2	x(1)		x(1)	48
2	2	x(2)			INA
2	2	x(3)	x		48
2	2	x(1)			(
2	2	x(5)	x	x(9)*(1)	123
2	2	x(1)	x	x(1)	95

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
<u>ENTRY OCCUPATIONS (Cont'd.)</u>							
669.887	Trimmer Tailor	2	2	x(1)			39
669.887	Lumber Straightener	2	2		x		39
742.887	Wiper (Furn.) Filler	2	2	x(1)			INA
761.887	Sander, Hand	1	2	x(2)			48
762.887	Core Layer, Plywood	2	2	x(1)	x	x(2)	117
762.887	Sheet Turner	1	2	x(1)			100
769.887	Woodworking Shop Hand	2	2	x(3)			608
922.887	Lumber Handlers & Yardmen	1	2		x	x(3)	43
942.887	Chasers	2	3		x		32
942.887	Chokerman	2	2		x	x(1)	32

ELECTRICITY-ELECTRONICS OCCUPATIONS

Instruction in electrical occupations emphasizes practical application of mathematics, the sciences, circuit diagrams, and blueprint reading, sketching, and other subjects essential to preparation for employment in the electrical occupations.

Instruction in electronic occupations emphasizes solid-state devices and components, electron tube characteristics, low frequency amplifiers, LC and RC oscillators, transistors, and amplitude and frequency modulation.

For the electrician training is concerned with the layout-assembly, installation, testing, and maintenance of electrical fixtures, apparatus, and wiring used in electrical systems.

CRAFTSMANSHIP AND RELATED

DOT CODE	DOT TITLE	GED	SVP	EMPLOYERS SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
720.281	Television Service & Repairman	4	7		x		85
721.281	Electric Motor Repairman	4	7		x		36
729.281	Electric Tool Repairman	4	6	x(1)			Est.15
825.281	Electrical Repairman	3	6		x		60
829.381	Cable Splicer	4	7		x		43

PRECISION WORKING

726.781	Light Assembler	3	5	x(1)			)
726.781	Electronics Assembler	3	5	x(2)	x	x(4)	) 391

MANIPULATING

721.884	Electric Motor Winder	3	6			x(1)	30
724.884	Toroidal Coil Winder	3	3	x(2)			25
724.884	Coil Winder, Hand	2	3	x(1)			25
724.884	Coil Winder II	3	3	x(2)			50
724.884	Kit Assembler			x(1)			Est.10
724.884	Laminator	2	3	x(1)			Est.20
724.884	Universal Winding Machine Operator	3	3			x(1)	Est.10
725.884	Exhaust Operator	2	4	x(1)			Est.10
725.884	Tube Assembler	3	4	x(1)			Est.75
725.884	Tube Component Assembler	2	3	x(1)			Est.10
726.884	Module Assembler	3	3	x(2)			10
726.884	Capacitor Assembler	2	2			x(1)	20
726.884	Cable Maker	3	3	x(1)		x(4)	12
726.884	Filter Assembler	3	3	x(1)			Est.30
729.884	Chassis Assembler	3	3	x(1)			10
729.884	Assembler, Elect. Accessories II	3	2	x(1)			30
729.884	Relay Assembler	3	5	x(1)			)
729.884	Electrical Control Assembler	3	5	x(1)	x		) 87

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYERS SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
<u>ENTRY OCCUPATIONS</u>							
726.687	Inspector, Components	2	2			x(2)	Est.10
726.687	Tester, Electronic Components	2	2	x(2)			10
726.884	Semi-Conductor Assembler	2	2			x(1)	Est.25
726.884	Printer Circuit Assembler	2	2	x(2)			8
724.887	Coil Finisher	2	2	x(2)			Est.20
726.887	Encapsulator	2	2	x(1)			Est.20
726.887	Silk-Screen Printer (Electronics)	2	2	x(1)			25
<u>POSSIBLE OCCUPATION (Given this classification because of difficulty of entry.)</u>							
824.281	Electrician	4	7		x		777

Occupational Clusters
Group IV

These are the occupational clusters that showed up better in the Analysis than in the Employers Survey or Employed Deaf Survey:

- A. Mechanical and Repair Occupations: Confined almost entirely in the Deaf Survey to Diesel Mechanic, Auto Body Repairman, and Industrial Truck Operator. A few more jobs showed up in the Employers Survey - of especial note, Automobile Mechanic.
- B. Construction Occupations: Strong in Analysis, very weak in the other two surveys. As with Farming, very few of the deaf go into many kinds of construction work despite good occupational needs. Common denominator may be outside work which most deaf seem to avoid. This could be because outside work may require moving around and constantly facing new and sometimes potentially dangerous environmental situations.

Construction occupations should then be considered with caution.

MECHANICAL AND REPAIR OCCUPATIONS

Mechanical training emphasizes understanding mechanical principles, the use of technical manuals, hand and power tools, and practice in the diagnosis of malfunctions, disassembly of units, parts inspection, and repair or replacement of parts.

Driving-operating training emphasizes regular maintenance of equipment and practice in developing the skills involved in driving or operating the specialized equipment appropriate to various industries.

DOT CODE	DOT TITLE	GED	SVP	EMPLOYERS SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
CRAFTSMANSHIP AND RELATED OCCUPATIONS							
620.281	Automobile Mechanic	4	7	x(1)			1665
620.281	Construction Equipment Mechanic	3	7		x		196
620.281	Front End Man	3	6		x		68
620.281	Mine Machinery Mechanic	4	6		x		36
620.281	Tractor Mechanic	4	7		x		37
620.281	Automobile Radiator Man	3	6		x		49
620.281	Engineering Equipment Mechanic	4	8	x(1)			10
620.281	Mechanical Maintenance Man	4	7		x		31
621.281	Aircraft and Engine Mechanic	4	7		x		62
625.281	Diesel Mechanic	4	7			x(3)	78
633.281	Office Machine Serviceman	4	7	x(1)			166
638.281	Millwright	4	7		x		233
899.281	Maintenance Man, Factory or Mill	4	7		x		120
622.381	Carman	4	7	x(1)			97
639.381	Vending Machine Repairman	4	6		x		55

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RELATED OCCUPATIONS (Driving-Operating)							
850.883	Bulldozer Operator I	3	5	x(1)			157
850.883	Power Shovel Operator	3	5		x		186
900.883	Concrete-Mixing Truck Driver	3	3		x		283
902.883	Dump Truck Driver	3	3		x		305
903.883	Tank Truck Driver	3	4		x		63
904.883	Tractor-Trailer Truck Driver	3	4		x		289
904.883	Log Truck Driver	3	5	x(1)			177
905.883	Truck Driver, Heavy	3	3	x(1)		x(1)	1348
906.883	Truck Driver, Light	3	3		x		608
921.883	Electric Bridge or Gantry Crane Operator	3	5		x		28
921.883	Tractor Crane Operator	3	4		x		28
921.883	Truck-Crane Operator	3	5		x		122

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYERS SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS T. 1975</u>
<u>RELATED OCCUPATIONS (Cont'd.)</u>							
922.883	Industrial Truck Operator	2	3	x(1)	x	x(3)	329
929.883	Logging Tractor Operator	3	5		x		30
<u>MANUAL AND MANIPULATIVE OCCUPATIONS</u>							
620.884	Wrecker	3	4		x		25
710.884	Parking Meter Serviceman	3	4		x		Est.10
915.884	Tire Repairman	2	3		x		72
915.887	Lubrication Man	2	4		x		95
<u>ENTRY OCCUPATIONS</u>							
620.281	Automotive Mechanic Apprentice	4	7	-	-	-	Est.200
620.884	Automobile Mechanic Helper	2	3		x		55
631.884	Hydroelectric-Machinery Mech. Helper	3	3			x(1)	Est.10
905.887	Truck Driver Helper	2	2		x		35

CONSTRUCTION OCCUPATIONS

Craftsmanship training in construction occupations emphasizes layout, fabrication, assembly, installation, and repair of structural units. Also emphasized are the care and use of hand and power tools, equipment, materials, common systems of construction and the principles involved, drafting, blueprint reading, applied mathematics, and material estimating.

Precision working instruction emphasizes the development of skill in working with the hands, hand tools, and work aids according to prescribed standards, adjusting the established techniques to the task at hand, and developing the ability to work to prescribed tolerances and rigid construction standards.

Driving-operating instruction emphasizes the development of skills involved in starting, stopping, and moving the controls of machines which must be steered or guided to move construction materials and products.

Manipulating instruction emphasizes the dextrous use of hands, hand tools, or special devices to work, move, guide, or place construction objects or materials.

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
CRAFTSMANSHIP							
860.131	Carpenter Foreman	4	7			x(1)	78
860.281	Maintenance Carpenter	4	7		x		60
860.381	Carpenter	4	7	x(1)	x	x(1)	1251
860.381	Shipwright	4	8		x		44
861.381	Bricklayer	3	8		x		60
862.381	Pipefitters	4	8		x		Est.250
862.381	Plumber	4	7		x		369
862.381	Plumber, Maintenance	4	7	x(1)			See above
866.381	Roofer	3	7		x		138
899.281	Maintenance Man, Factory or Mill	4	7		x		120
899.381	Maintenance Man, Building	4	7	x(1)	x	x(1)	633
869.281	Oil Burner & Furnace Installation Serviceman	3	7		x		32
PRECISION WORKING							
806.781	Trailer Assembler	3	5			x(1)	66
840.781	Painter	3	7	x(1)	x	x(1)	279

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
PRECISION WORKING (Cont'd.)							
842.781	Plasterers & Related Occupations	3	7		x		47
845.781	Painter, Automobile	3	7			x(2)	185
860.781	Carpenter, Rough	3	7		x		95
861.781	Terrazo Worker	3	7			x(1)	2
861.781	Tile Setter	3	7		x		29
864.781	Floor Layers & Finishing Occupations	3	6		x		75
DRIVING-OPERATING OCCUPATIONS							
850.883	Bulldozer Operator I	3	5	x(1)			Est.25
850.883	Power Shovel Operator	3	5		x		186
851.883	Grader Operator	3	5		x		119
MANIPULATING OCCUPATIONS							
741.884	Painter, Spray	3	5			x(1)	311
806.884	Assembler, Mobile Homes	3	4		x		81
844.884	Cement Mason	3	6		x		Approx.135
851.885	Pipe Layers	3	3		x		66
862.884	Pipe Fitter Helper	3	3				4
862.884	Laborer, Construction or Leak Gang	2	4	x(1)			10
863.884	Insulation Worker	3	6	x(1)			57
869.884	Construction Worker II	3	5		x		423
891.884	Building Cleaner, Sandblaster	3	3		x	x(1)	2
ENTRY OCCUPATIONS							
741.887	Painter Helper, Spray	2	2			x(1)	11
899.884	Highway Maintenance Man	2	2				322
859.885	Crusher Operator	2	2		x		85
869.885	Kettleman	1	2		x		25
809.887	Laborer, Shipyard,	1	1		x		Est.25
844.887	Cement Mason Helper	2	2		x		Est.35
850.887	Laborer, Road	1	1		x		105
850.887	Laborer, Pile Driver	2	2	x(1)			5
851.887	Grader I	1	1		x		5
852.887	Laborer, Pipe Line and Plumbing	1	2		x		20
860.887	Laborer, Carpentry	1	1		x		206
866.887	Roofer Helper	2	2		x		36
869.887	Construction Worker II	1	2	x(1)			200

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
ENTRY OCCUPATIONS (Cont'd.)							
869.887	Hod Carrier (Bricklayer & Plasterer Trades)	2	2		x		32
869.887	Laborer, Track	2	2		x		52

See Electrical-Electronic Cluster for Electrician
See Metal Working Cluster for Metal Workers

Occupational Clusters
Group V

These clusters are established by Worker Trait Groups. They do not reflect any particular industry. One is basically entry (Manual and Manipulative). The more important aspects of these clusters center on worker aptitudes, interests, temperament, physical ability, etc. The clusters follow:

- A. Crafts and Precision Operations (N.E.C.): Mainly the result of Analysis and Employed Deaf Survey.
- B. Machine Operating - Controlling, N.E.C.: A small but strong cluster.
- C. Manual and Manipulating Occupations (N.E.C.): Strong in Employer Survey and Analysis. These do not appear to be occupations that the deaf would be interested. Many are monotonous and low paying.
- D. Inspecting, Testing, Checking Occupations (N.E.C.): Strong in Employer Survey. Almost nothing in Analysis and Employed Deaf Survey, to be considered with caution.

CRAFTS AND PRECISION OPERATION OCCUPATIONS (N.E.C.)

Craftsmanship and Precision Operating training emphasizes the development of manual skills and the acquisition and application of an organized body of knowledge related to materials, tools, machines, and the principles associated with various crafts.

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
921.280	Rigger II	4	6		x		36
785.281	Alteration Tailor	4	7			x(1)	20
500.380	Plater	4	7	x(2)	x		32
078.381	Medical Laboratory Assistant	4	5		x		121
199.381	Radiographer	4	5			x(1)	7
338.381	Embalmer	4	7		x		42
362.381	Spotter	3	6		x		32
365.381	Shoe Repairman	3	7			x(3)	Est.10
518.381	Molder	4	7		x		92
713.381	Optician	3	6		x		47
714.381	Assembler, Photo Apparatus	4	7		x		275
976.381	Developer	4	7		x	x(1)	53
143.282	Photographer	4	6		x		30

MACHINE WORK: DRIVING-OPERATING-CONTROLLING, N.E.C.

Instruction emphasizes the acquisition of knowledge about the functional nature of machines and the development and application of skills involved in setting up, starting, adjusting, watching, and stopping machines. Typically involvement is with one kind of machine peculiar to a particular industry.

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
363.782	Presser, Machine	3	4	x(2)	x	x(1)	148
371.782	Bridge Operator	3	4		x		48
540.782	Compounder	3	7			x(1)	2
590.782	Impregnator	3	3	x(1)			7
692.782	Broomstitcher	3	4			x(1)	5
787.782	Sewing Machine Operator	3	4	x(4)		x(3)	25
787.782	Sewing Machine Operator, Regular	3	4		x	x(1)	190
910.782	Track Repairman	3	4		x		25
950.782	Stationary Engineer	4	7		x		121
955.782	Sewage Plant Operator	3	5	x(1)			59
909.883	Garbage Collector	3	3			x(2)	179

MANUAL AND MANIPULATIVE OCCUPATIONS (N.E.C.)

Most occupations in this cluster are entry occupations. On-the-job training is the method ordinarily used to develop job competency. Personal and physical characteristics such as reliability and industry, and physical stamina, motor coordination, hand-and-finger dexterity are very often the predominant hiring requirements. Instruction emphasizes exposure to machines, hand tools, work aid, and the development of work habits commonly required throughout industry and commerce.

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
363.884	Presser, Hand	1	1	x(1)			77
363.884	Seam Presser	2	2	x(1)			90
369.884	Laundry Operator	2	3		x		65
710.884	Thermostat Assembler	2	2			x(1)	5
713.884	Lens Generator	3	4		x	x(1)	9
732.884	Fly Trier	2	3	x(1)			10
739.884	Candle Dipper	3	4	x(1)			4
749.884	Decal Applier	2	2	x(1)			5
772.884	Glass Blowing Lathe Operator	3	5	x(1)			2
780.884	Sewing-In Operator	2	3			x(1)	10
780.884	Spring Clipper	2	2			x(1)	10
780.884	Springer	3	4			x(1)	7
780.884	Box Spring Maker	3	3	x(1)			10
899.884	Highway Maintenance Man	3	2		x		372
940.884	Cordwood Cutter	2	5			x(1)	2
970.884	Painter, Air Brush	2	3	x(1)			5
363.885	Press Operator	2	3	x(1)	x		57
363.885	Shirt Presser	2	2		x		36
369.885	Shirt Folding Machine Operator	2	2	x(1)			Est.25
599.885	Spray Machine Tender	3	4			x(1)	3
649.885	Bag-Machine Operator	2	3	x(1)			12
787.885	Sewing Machine Operator, Automatic	2	3			x(3)	6
920.885	Packager, Machine	2	2	x(6)			210
950.885	Boiler Room Helper	3	3		x		36
951.885	Fireman, High Pressure	3	4		x		79
951.885	Fireman, Low Pressure	2	4		x		57
361.885	Washer, Machine	3	4		x		44
976.885	X-Ray Developer, Machine	3	2		x		25+

DOT CODE	DOT TITLE	GED	SVP	EMPLOYER SURVEY	ANALYSIS (D.O.T.)	EMPLOYED DEAF SURVEY	NEEDS TO 1975
363.886	Flatwork Feeder	1	2	x(1)			(
363.886	Flatwork Catcher	1	2	x(1)			(
363.886	Flatwork Finisher	1	2	x(1)			(
361.887	Laundry Laborer	1	1	x(2)	x		137
369.887	Folder	1	2		x		108
369.887	Marker	2	3	x(1)	x		28
369.887	Marker (Laundry)	2	3		x		166
407.887	Laborer, Landscape	2	2		x		166
407.887	Parkworker	1	2		x		49
519.887	Foundry Worker	1	2		x		85
599.887	Washer II	2	2	x(1)	x		126
706.887	Assembler, Production	2	2				15
719.887	Optical Element Cleaner	2	3		x	x(1)	66
739.887	Assembler, Small Products	2	2	x(11)			2
749.887	Masker	2	3	x(1)			15
780.887	Clip-and-Turn Man	1	1	x(1)			30
869.887	Trackman	2	2				10
919.887	Cleaner II	1	1		x	x(1)	52
920.887	Bagger	2	2		x		1531
920.887	Packager, Hand	2	2	x(16)	x	x(5)	213
920.887	Fancy Packer	2	2	x(1)			(
920.887	Candle Wrapper	2	2	x(1)			(
920.887	Candy Packer	2	2	x(1)			(
920.887	Filler	2	2	x(1)			(
922.887	Stevedore	2	2				(
922.887	Warehouseman, Laborer	2	2	x(1)	x		160
922.887	Order Filler	2	2	x(3)			(
922.887	Laborer, Stores	2	2	x(5)			(
929.887	Take-Off Man	2	3	x(1)	x	x(6)	1700
929.887	Car Loader	2	3	x(1)			(
929.887	Material Handler	2	3	x(7)	x	x(2)	915

INSPECTING, TESTING, CHECKING OCCUPATIONS, N.E.C.

Instructions emphasize the acquisition of technical knowledge of materials, products, or processes related to the occupation; the evaluation of grades, flaws, and irregularities relative to established standards; and the use of various devices to verify adherence to specifications such as gauges, calipers, micrometers, scales, or other devices and equipment. On-the-job training is the common method of developing job competency in these occupations.

<u>DOT CODE</u>	<u>DOT TITLE</u>	<u>GED</u>	<u>SVP</u>	<u>EMPLOYER SURVEY</u>	<u>ANALYSIS (D.O.T.)</u>	<u>EMPLOYED DEAF SURVEY</u>	<u>NEEDS TO 1975</u>
689.684	Specker (textile)	3	3	x(1)			Est.5
789.684	Inspector (leather prod.)	2	4	x(1)			5
224.687	Rubber Compounder (rubber goods)	2	3	x(1)			2
759.687	Rubber Goods Inspection Trimmer	2	3	x(1)			5
781.687	Cloth Examiner, Hand	2	3	x(2)			10
781.687	Assembler (garment)	2	3	x(1)			8
789.687	Garment-Inspector	3	3	x(2)			(10
789.687	Finished-Garment Inspector	3	3	x(1)			(
<u>ENTRY JOBS</u>							
361.587	Flatwork Tier	2	2	x(1)			10
609.684	Inspector, General (any ind.)	2	2	x(1)			10
361.687	Classifier (laund.)	2	2	x(1)			6
369.687	Checker (laund.)	2	2	x(1)	x		39

Key to Figures Used in the
Occupational Cluster Tables

An "x" in the Employer Survey, Analysis, or Employed Deaf Survey column(s) indicates the source(s) of jobs listed.

The number in parenthesis in the Employer Survey column indicates the number of firms reporting this occupation.

The number in parenthesis following the "x" in the Employed Deaf Survey column indicates the number of persons employed by that title in the firm contacted.

A number following the asterisk in the Employed Deaf Survey column indicates recent deaf school graduates.

Explanation of Specific Vocational Preparation Time Scales

- Level 1 - Short demonstration only
 2 - Anything beyond short demonstration up to and including 30 days
 3 - Over 30 days up to and including 3 months
 4 - Over 3 months up to and including 6 months
 5 - Over 6 months up to and including 1 year
 6 - Over 1 years up to and including 2 years
 7 - Over 2 years up to and including 4 years
 8 - Over 4 years up to and including 10 years
 9 - Over 10 years

Correlation of G.E.D. Requirements of Jobs
and Reading Achievement of Employed Deaf in Oregon

GED Level of Jobs held by Deaf in Oregon	Middle 68% Range, Reading Achievement Level of Oregon's employed Adult Deaf (based on Holdt Survey material)*
5, 6	7.5 - 12.9
4	5.0 - 10.4
3	3.8 - 9.2
2	2.5 - 7.9
1	1.2 - 6.6

*Using the regression formula:

$$Y = r \frac{\sigma_y}{\sigma_x} (X - M_x) + M_y$$

with X = GED Level

Y = Reading Achievement Score

The standard error of estimate (test)

$$= \sigma \sqrt{1-r^2} = \pm 2.7$$

EXPLANATION OF GENERAL EDUCATIONAL DEVELOPMENT LEVEL

Level	Reasoning Development	Mathematical Development	Language Development (Comprehension and Expression Level)
4	Apply systematic principles to solve practical problems. Interpret a variety of instructions furnished in written, oral, diagrammatic, or schedule form. Deal with a variety of concrete variables.	Perform ordinary arithmetic algebraic, and geometric procedures in standard, practical applications.	Read novels, newspapers, manuals, dictionaries, and encyclopedias with high literary standards but geared to popular understanding in the vocabulary used in writing or discussion style, as <u>Science Digest</u> or <u>Life</u>. Write business letters or reports using prescribed format and conforming to rules of punctuation, grammar, and style.
3	Apply common-sense understanding to carry out instructions furnished in written, oral, or diagrammatic form. Deal with problems involving several concrete variables.	Make arithmetic calculations involving fractions, decimals, and percentages.	Read a variety of novels, magazines, safety rules, instructions in the use and maintenance of shop tools and equipment restricted to words easily understood by the general public, as <u>Readers Digest</u> or newspapers. Write reports in proper format, punctuation, spelling, grammar.
2	Apply common-sense understanding to carry out detailed but uninvolved written or oral instructions. Deal with problems involving a few concrete variables.	Use arithmetic to add, subtract, multiply, and divide whole numbers.	Read adventure stories, comic books, or instructions for assembly of model cars and airplanes, composed of short sentences and simple concrete vocabulary that practically the entire reading population can comprehend. Write compound and complex sentences, using cursive style, proper end punctuation and employing adjectives and adverbs.
1	Apply common-sense understanding to carry out oral or written one- or two-step instructions in standardized situations involving one or two occasional variables.	Perform simple adding and subtracting.	Sign name and understand what is being signed. Read simple lists, addresses, safety warnings, road signs. Keep very simple production records.

Steadiness of Employment

The following table indicates the relationship of fulltime to part time employment among the currently employed deaf and compares the number employed for specified periods of time. By far the greater share had been employed full time for two years or more

Steadiness of Employment

<u>Permanent Job</u>	<u>Total</u>	<u>Under 6 Months</u>	<u>6 Months - 2 Years</u>	<u>2 Years and Over</u>	<u>Not Known</u>
NUMBER					
Full Time	268	23	47	195	3
Part Time	20	3	0	11	6
Total	288	26	47	206	9
PERCENT OF TOTAL					
Full Time	268	8.6%	18.5%	72.8%	0.1%
Part Time	20	15.0%	0	55.0%	30.0%
Total	288	9.0%	16.3%	71.6%	3.1%

The next table arranges the same deaf group with their longest period of employment (not necessarily their last) and indicates the percentage for each of the specified time periods.

Longest Period of Employment in One Job

<u>Longest Period of Employment (Years)</u>	<u>Percent of Sample</u>
Under 1	3.47
1 - 2	22.57
3 - 5	20.49
6 - 10	27.08
11 - 20	17.01
Over 20	7.64
Not Known	1.74
TOTAL	100.00

Possible Job Satisfaction of Occupations
that Have Been and Are Being Held
by the Employed Deaf in Oregon

This analysis is a follow-up to the Gallaudet Study reported in Occupational Conditions Among the Deaf. Using a nationwide sample of 10,101 employed deaf, the Gallaudet Study attempted to show what percent of occupations held longest by a deaf person was also held "currently." A high percentage was thought to imply relative stability and job satisfaction. A low percentage would possibly indicate the unattractiveness of certain occupations for deaf workers.

To duplicate this study, information was obtained from the files of the Vocational Training Needs Study for the Special Schools Division for the Deaf. Information on 288 employed deaf in Oregon was carefully analyzed. Nineteen persons were eliminated because of inadequate data. Then the study was done using the 17 occupational clusters previously developed. The same thing was also tried using DOT categories and a sample of 211 considered easiest to work with.

The results of the last study are shown in the following. Not all the numbers used are large enough to discuss. However, those employed in the Professional, Technical, and Managerial seem to clearly indicate job satisfaction while service occupations and "other" structural seem not to do so.

The study using the occupational clusters developed for the report, Career Education at O.S.S.D. goes into greater detail. The results are ordered with those clusters exhibiting the highest ratio (and greatest job satisfaction and stability) coming first.

Once again, and coming at the top of the list with 100%, are the three Professional, Managerial, and Technical clusters. Crafts and Precision Operation also has a 100% ratio, but with only three persons represented cannot be considered significant by itself. However, the other clusters have internal breakdowns in which Crafts and Precision Operations, if pulled out would continue to show a high ratio. This somewhat corresponds to the group used in the Gallaudet Study--Craftsmen, Foremen, etc. which had the highest ratio (97.7%). Metal Working comes next with a 30 to 29 ratio, or 97%. As expected the Crafts and All Around Machine Operating (Sheet Metal, Auto Body Repair, Machinist, etc.) do best: 100%. Office Occupations (89%) follow. Here is the Data Processing area (mainly Key Punch) that does best: 100%.

Clusters with low ratios are Construction (75%) and Manual and Manipulating, N.E.C. 65%. Graphic Arts is also low, 73%. However, this seems to be the result of several things. One reason is that printing is considered as a "favored" occupational area for the deaf. Some deaf may enter into printing occupations because of this alone, and find that they do not particularly care for this type of work. Although the shortwork time of some linotype operators prevented this occupation from showing up to any extent statistically, this might have been such an occupation. Considerable turnover was shown. The "printer" also seemed involved in some turnover. This may have been the result of changeover from the cylinder press and related, to the offset press.

Relationship of Longest Employment and Current Employment

<u>Occupation</u>	<u>Longest Period of Employment</u>	<u>Currently Employed in Occupation</u>	<u>Ratio of Longest Employment to Current Employment</u>
Professional, Technical & Managerial, Teacher & Instructor	21	21	1.00
Other	9	9	1.00
Clerical & Sales			
Keypunch Operator	16	16	1.00
Other	16	12	.75
Service Occupation	17	12	.71
Farm & Forestry	1	1	1.00
Processing Occupation			
Food Processing	4	4	1.00
Other	6	6	1.00
Machine Trades			
Printing Occupation	6	4	.67
Lumber & Wood Working	24	21	.89
Other	7	7	1.00
Benchwork Occupation			
Electronic Assembly	8	8	1.00
Other	29	23	.79
Structural Work			
Sheet Metal Work	5	5	1.00
Auto-Body Repair & Printing	5	5	1.00
Other	12	8	.67
Miscellaneous Occupations			
Packager	3	3	1.00
Laborer Stores	8	5	.63
Other	15	12	.80
TOTALS	212	182	.86

For further information see the following table.

Relationship Between Longest Job and Current Job

Occupational Cluster	Longest Employment	Current Employment	Ratio: Longest to Current Employment
Education & Social Service			100%
Teacher, Deaf	21	21	
Other	5	5	
Science; Engineering & Engineering Tech.	4	4	100%
Business Relations (Prof., Tech., Mgrl.)	6	6	100%
Crafts & Precision Operating, N.E.C.	3	3	100%
Metal Working Occup.	30	29	97%
Crafts & All Around Machine Operators (Sheet Metal, Machinists, Auto Body Rep.)	14	14	
Other	16	15	
Office Occupations	37	33	89%
Data Processing	18	18	(100%)
Key Punch	(16)	(16)	
Other	(2)	(2)	
Bldg. & Grounds Maintenance	9	8	89%
Bldg. Maintenance (Porters, Etc.)	8	7	
Grounds Keeper	1	1	
Home Economics	8	7	88%

Relationship Between Longest Job and Current Job
(Cont.)

<u>Occupational Cluster</u>	<u>Longest Employment</u>	<u>Current Employment</u>	<u>Ratio: Longest to Current Employment</u>
Wood Products	48	41	86%
Non-Entry	24	21	
Entry (Chainman; Chokerman; Sander Machine; etc.)	24	20	
Electricity-Electronics	12	10	83%
Machine Work, N.E.C. (Driving, Operating, Controlling, Sewing Machine Operators, Garbage Collectors, Etc.)	10	8	80%
Quantity Food Processing	18	14	78%
Food Service & Related (Usually Short Hours)	12	8	
Agricultural Products (Short Hours and/or seasonal)	6	6	
Mechanical & Repair	8	6	75%
Craftsmanship	4	2	
Driving - Operating	3	3	
Other	1	1	
Construction Occupations	12	9	75%
Graphic Arts	15	11	73%
Craftsmanship & Related	12	10	(83%)
Linotype	(7)	(6)	
Other	(5)	(4)	
Printing, Other	3	1	
Manual & Manipulative, N.E.C.	23	15	65%
Laborer, Stores; Materials			
Handler; Packager, Hand	11	9	(82%)
Other	12	6	(50%)
Inspecting & Checking, N.E.C.	0	0	-
TOTALS	269	230	85.5%

Identification of Jobs in Which Deafness May Be An Advantage

Jobs in which deafness could prove to be an advantage fall into three categories. Those jobs which are extremely noisy such as MOLDER FEEDER, KEY PUNCH OPERATOR, or CAN CONVEYOR FEEDER are included in Category One. Category Two includes those jobs which might or might not be noisy, depending on recognized variables within the classification such as WOODWORKING MACHINE FEEDER. In one instance, a worker might be feeding a planer which is extremely noisy, or feeding a sanding machine which may be comparatively quiet. Category Three includes only jobs which are relatively quiet but are usually found in a very noisy environment, such as BUTTONER or ASSEMBLER, SMALL PRODUCTS.

Examples of Category 1 Jobs Found in the Survey

213.582	KEY PUNCH OPERATOR	664.782	SWING TYPE LATHE OPERATOR
524.782	ENROBING-MACHING OPERATOR	669.886	MOLDER FEEDER
529.885	CAN CONVEYOR FEEDER	681.782	DRESSER TENDER
550.782	BANBURY-MIXER OPERATOR	681.885	YARN WINDER
581.885	RAW STOCK DRYER TENDER	681.885	QUILLING-MACHINE OPERATOR, AUTOMATIC
585.885	SHEARING-MACHINE OPERATOR	682.885	SPINNER, FRAME
616.885	BODY MAKER	683.782	WEAVER
617.885	PUNCH-PRESS OPERATOR	683.886	BATTERY LOADER
617.885	SEAMING MACHINE OPERATOR	689.885	WINDER OPERATOR, AUTOMATIC
619.886	AUTOMATIC STACKER	689.886	SPOOLER OPERATOR, AUTOMATIC
649.885	BAG-MACHINE OPERATOR	689.886	SPINNING DOFFER
650.582	LINOTYPE OPERATOR	692.885	STAPLING MACHINE OPERATOR
651.782	OFFSET PRESSMAN		
652.782	BOX PRINTER		

These noisy Category I jobs mainly involve machines that (1) shape and condition metal by punching, shearing, blanking, and press work; (2) operate at high speeds while spinning, weaving, and fabricating textiles; (3) cast type and print; etc.

Examples of Category 2 Jobs Found in the Survey

318.887	DISHWASHER, MACHINE	786.782	SEWING MACHINE OPERATOR, REGULAR EQUIPMENT
526.886	BAKER HELPER (bake. prod.)	786.885	BUTTONHOLE MACHINE OPERATOR
569.885	BLUE SPREADER	786.885	SEWING MACHINE OPERATOR, SPECIAL EQUIPMENT
606.782	DRILL PRESS OPERATOR	682.884	PIPEFITTER HELPER
669.782	WOODWORKING MACHINE OPERATOR	682.884	LABORER, CONSTRUCTION OR LEAK GANG
669.886	WOODWORKING MACHINE FEEDER	920.885	PACKAGER, MACHINE

Examples of Category 3 Jobs Found in the Survey

224.687	RUBBER COMPOUNDER	690.782	TUBER-MACHINE OPERATOR
363.782	PRESSER, MACHINE	699.782	DIE CUTTER
369.885	SHIRT-FOLDING MACHINE OPERATOR	709.887	BAG SEALER
381.887	PORTER II	709.887	LABORER, TIN CAN
520.885	STUFFER	739.887	ASSEMBLER, SMALL PRODUCTS
524.884	ENROBING MACHINE CORDER	759.687	RUBBER GOODS INSPECTION TRIMMER
524.884	DIPPER, HAND	762.884	NAILER, HAND
525.884	CRAB SHAKER	781.484	MARKER I
525.884	CRAB BUTCHER	781.884	MATCH MARKER
525.887	SMOKED MEAT PREPARER	781.887	TRIMMER, HAND
526.782	COOK, KETTLE	781.887	SPREADER I
529.886	CANNERY WORKER	782.884	MENDER
529.886	FACTORY HELPER	782.887	BUTTONER
550.884	DYE WEIGHER	789.687	GARMENT INSPECTOR
550.885	MILLMAN (rubber goods)	794.887	SCRAPPER
580.885	TENTER-FRAME OPERATOR	920.887	PACKAGER, HAND
582.886	RAW STOCK TUBMAN	920.887	PACKAGING LINE ATTENDANT
583.885	FOLDING MACHINE OPERATOR	920.887	FILLER
583.885	PRESS OPERATOR (textile)	920.887	MARKER II
609.684	INSPECTOR, GENERAL	929.887	MATERIAL HANDLER
641.887T	CARTON FORMER	929.887	CAR LOADER
643.885	BINDERY WORKER		
669.886	CHAINMAN		
683.885	DRAWER IN		

Many of the Category 3 jobs are found in industries concerned with the manufacture of (1) apparel and other finished products made from fabrics; (2) food and kindred products; (3) fabricated metal products; etc. The noise may come from the operation of a number of noisy machines - as sewing - machines - operating together; moving chains and conveyor belts; the striking of cans together.

Identification of Jobs in Which the Employer Would Require the Ability to Read Lips and Speak

Two lists of jobs have been developed. In both lists the employer has indicated that he would hire deaf persons, but he would require the ability to read lips. In one, speaking has been added. The three DOT categories that contain the largest percentage of jobs requiring lip reading are: Professional, Technical, and Managerial (25%); Service (42.5%); and Structural (32%).

The Service and Structural occupations might require a greater variety of tasks none of which would be done under exactly the same circumstances. This could result in a higher need to lip read in order to follow constantly changing instructions. The percentage of jobs in the Professional, Technical, Managerial category thought to require lip reading (25%) is actually lower than the percentage

(58.6%) of non-teaching professional deaf found in a Gallaudet survey as interpreted by Crammatte⁵ who used lip reading as a method of communicating with hearing persons at work. (Actually only 21% of professional in another survey by Crammatte actually claimed to understand "almost everything said" using lip reading.)

In the Employer Survey only 31% of the jobs listed as requiring lip reading also required speaking.

Number of Jobs Requiring
Lip Reading Only 61 (69%)

Number of Jobs Requiring
both Lip Reading and
Speaking 28 (31%)

TOTAL 89

This is different from the actual use of talking (36.4%) and lip reading (33.5%) as a means of communication by the deaf at work.⁶ In the Oregon Employer Survey only one instance was found where speaking was listed and lip reading was not.

The highest percentage of jobs requiring speaking and lip reading was also in the Professional, Technical, and Managerial category:

<u>DOT Category</u>	<u>Total No. of Jobs in Survey</u>	<u>No. of Jobs Said to Require Lip Reading</u>	<u>No. of Jobs Said to Require Speak- ing</u>
0, 1 Professional, Technical, and Managerial	24	6	5
2 Clerical	65	10	2
3 Service	64	28	3
4 Farming, Fishing	0	0	0
5 Processing	63	6	2
6 Machine Trade	85	14	6
7 Bench Work	133	10	3
8 Structural Work	22	7	3
9 Miscellaneous	72	8	4
TOTAL	528	89	28

⁵Crammatte, Alan B., Deaf Persons in Professional Employment, Springfield, Ill., Charles Thomas, 1968.

⁶Bigman, Stanley K., and Lunde, Anders S., Occupational Conditions Among the Deaf. Washington D.C. Gallaudet College, 1959.

The importance of lip reading and speaking seem to be peculiar to some kinds of jobs and a legitimate job requirement; however such requirements are sometimes specified by particular employers only and cannot actually be considered as integral job requirements.

By examining the lists for those jobs requiring lip reading (89), whether by itself or with speaking, it is possible to determine in what industries lip reading is important. For example, a large number of the jobs (18 out of 30) in the SIC Major Group 34 (Fabricated Metal Products) had the suggested requirement of lip reading. This seemed particularly significant since it involved jobs in five different companies where there were noisy machines that shaped and conditioned metal. The supposition might be that many of the jobs listed in Categories I and II, where "Deafness May Be An Advantage," are listed not because being physically deaf is an advantage (the non-deaf can use ear plugs), but rather because the deaf can better receive communications in a noisy environment than the non-deaf through the act of lip reading!

Many other jobs where lip reading was a suggested requirement were found in non-manufacturing industrial categories (41 out of 89). These jobs were in hotels, hospitals, laundries, stores, etc. and involved the large majority of the DOT Category 3, Service, jobs.

APPENDIX I

Six Comments by Employer Survey Team: Information About Labor Market Opportunities

Following are the comments and observations of Portland and Salem Employment Division staff accruing from their interviews with employers concerning opportunities for the deaf.

Statement I:

"During my visits with the various employers, I found no opposition to hiring any handicapped person as long as they could do the work and not be a liability to the company as an accident risk. Several employers were using deaf workers in some capacity. Others felt inability to hear motors would increase the risk of accidents."

Statement II:

"It was my observation and conclusion that if an employer considered hiring the deaf at all, that he had the following major reservations:

1. Was the applicant qualified to do the work.
2. Was the nature of the work (noise level, etc.) such that the applicant could perform more efficiently with less detriment to himself and others than would be so if the work were performed by someone with normal hearing.

3. To what degree would the applicant's hearing defect jeopardize himself and fellow employees, especially working with or in the proximity of moving parts or machinery.

"Many employers pointed out that fork-lifts darting in and out of aisles could jeopardize deaf workers; or his inability to hear warning signals - whistles, etc., could jeopardize him and perhaps other workers."

Statement III:

"Generally, employers are receptive to the idea of hiring deaf except in areas where public contact and/or telephone communication is involved or where hearing is necessary to perceive warning signals of safety hazards.

"Some employers evidently think deafness is more of a handicap than is actually true - the reasons given for not hiring deaf (in blanket discrimination) are belied by the facts that: (1) a knitting mill employs a deaf mite in the spinning department as a fork-lift operator, (2) a steel fabrication plant safety director says the company had employed successfully a welder in an area where overhead cranes were in operation. Said welder "sensed" approaching cranes faster than other workers who heard warning whistles.

"The manager of a food preparation center for a number of chain stores said that the deaf could handle any job in the place - unqualifiedly. The supervisor of sewing operations at a large shirt factory remarked that deafness would be an asset. The girls would talk less and work more. Besides, the noise level is high.

"In final analysis, it remains true that the best employer to contact is the one with a job opening."

Statement IV:

"Employers showed a willingness to hire deaf people in most production jobs where danger wasn't a significant factor. They were reluctant to hire deaf people around moving equipment because they felt noise often provides to the people in these jobs an awareness of danger.

"Several employers indicated they would hire deaf people for office jobs if they were otherwise qualified. However, such jobs would be ones which didn't require a lot of oral communication by phone or on a personal basis."

Statement V:

"One employer absolutely refused to consider deaf in his woodworking plant because of the danger but admitted he had to furnish his workers with ear plugs because of the high noise level!

"It would appear all chemical plants might bar deaf workers because of the widespread use of audio signals for danger and evacuation of the plant.

"The safety officer and personnel manager of one national firm discussed the problem of hiring non-hearing quite frankly and admitted they hadn't thought of hiring the deaf. They also seemed quite willing to do so on the same basis they would hire anyone else, that is on the same qualifications. Both appeared to be intrigued with the possibilities in hiring

deaf people and admitted they had "had their eyes opened".

"The personnel officer at a pulp and paper mill appeared quite interested in hiring some deaf employees in their paper bag plant which is very noisy and has entered into negotiation with DVR for that purpose.

"A frequent reaction obtained from employers was, "But how will my foremen be able to train and communicate with a deaf worker?" Often the employers would exhibit a negative attitude toward hiring deaf people either because of the "safety" problem or because of the "communication" problem but relent after discussing the attributes of the deaf and agree that they very well might have some jobs the deaf could do.

"It would appear a program of education of employers to show them what a deaf person is and what he can do would be helpful. Secondly, and contrary to the usual rule of going job seeking alone, a deaf person should have first contact made for him by a knowledgeable person (knowledgeable in placement practices and about the deaf). Once contact is made, the deaf person should be allowed to carry out the employment process with the employer on his own but be given whatever background technical support he may need."

Statement VI:

"Many government jobs for which deafness would not be a significant handicap are lost to the deaf because of the ranking system. Generally, there is no provision for preferential treatment to put the deaf on a competitive basis with the hearing in the system of examinations and ranking.

"One personnel officer emphasized that the deaf, like non-handicapped, could do about anything. "What can the deaf do?" is equivalent to asking "What can man do?" It all depends upon the individual and as a group the deaf have or may do almost anything anyone else can do. Tomorrow a deaf person may break into a job never before performed by the deaf.

"It seems that there is sufficient variation in jobs and degrees of specialization that the deaf can find an opportunity and an employer willing to try him at almost anything.

"Deafness is not a job handicap per se for many jobs, but it often results in the deaf being less well qualified than the hearing. Many employers are likely to consider it as a job handicap and will need to be shown that it is not. Only a greater degree of selectivity is required for the deaf.

"Selectivity is exercised to some degree in all placements. A greater degree of selectivity must be exercised in order to place the deaf in positions where their deafness is not a significant performance handicap.

"The deaf are not hired because they are deaf any more than the hearing are hired because they can hear. Each is hired on the balance of qualities he offers relative to a particular position.

"There is a tendency with many employers to over-estimate the danger of hazards even though he has had good experience with deaf in non-hazardous jobs. Let us not push our luck attitude.

"Ignorance and prejudice are persistent - they take a lot of killing.

"In some organizations, the problems involved in using deaf workers tends to be cumulative. One deaf person is only half the problem of two. In other words, a deaf worker in one position is no assurance that the employer could use two.

"Handicapped are likely to fare better at the hands of an experienced personnel officer. These people are aware that the handicapped, including the deaf, frequently offer qualities to offset their handicap and will get an equal opportunity for the job."

APPENDIX II

Occupations in Which Employers Might Find the Deaf To Be Acceptable Employees

<u>Individual Firms Interviewed</u>		Total No. of Different Job Titles	Ability to Read Lips & Speak Required	Ability to Read Lips Required
SIC Code	Product			
1951	Small Arms	3		
2013	Prepared Meats	5		
2026	Dairy Products	7		1
2033	Canned Vegetables	4	1	
2037	Frozen Fruit	7		
2037	Frozen Vegetables	6	1	
2051	Bakery Goods	3		
2052	Cookies & Crackers	None		
2071	Confectionery Prod.	7		2
2099	Food Prep., NEC	None		
2231	Weaving & Finishing Mill	10		4
2231	Weaving & Finishing Mill	13		
2253	Knit Outerwear	18		1
2321	Men's & Boy's Shirts	24		2
2337	Women's Coats & Robes	21		
2339	Women's Outerwear	None		
2369	Children's Outerwear	6		
2393	Textile Bags	2	2	
2411	Logging Camps	3		
2421	Sawmills	28		
2432	Veneer & Plywood	4		
2441	Nailed Wooden Boxes	None		
2499	Wood Products	None		
2511	Furniture	15		
2515	Mattress & Bed Springs	3		

Individual Firms Interviewed		Total No. of Different Job Titles	Ability to Read Lips & Speak Required	Ability to Read Lips Required
SIC Code	Product			
2541	Wood Fixtures	2	1	
2621	Paper Mills	2		
2631	Paperboard Mills	1		
2641	Paper Coating & Glazing	None		
2642	Envelopes	1		
2654	Sanitary Food Containers	3	3	
2711	Newspaper Printing	4		1
2751	Commercial Printing except Lithographic	4		
2751	Commercial Printing except Lithographic	None		
2752	Commercial Printing Lithographic	2	2	
2761	Manifold Business Forms	6		
2789	Bookbinding	1	1	
2834	Pharmaceutical Prep.	2		
2844	Toilet Prep.	None		
2891	Adhesions & Gelatin	None		
2893	Printing Ink	None		
3069	Fabricated Rubber Prod.	6		
3079	Misc. Plastic Prod.	None		
3221	Glass Containers	None		
3241	Cement	None		
3411	Metal Cans	7		6
3421	Cutlery	3		
3425	Saw Blades	4	3	
3429	Hardware	6		
3441	Steel Fabrication	6		6
3444	Sheet Metal Work	None		
3451	Screw Machine Products	1		1
3471	Plating & Polishing	3		2
3611	Electric Measuring Inst.	21		
3612	Transformers	12	1	
3661	Tel. & Tel. Apparatus	13		2
3679	Electronic Components	3		
3679	Electronic Components	8		1
3693	X-Ray Apparatus & Tubes	5		
3822	Auto. Temp. Controls	1		
3861	Photo. Eqpt. & Supplies	1		
3914	Plated Ware	6		
3941	Games & Toys	17		1
3949	Sporting & Athletic Goods	4		
3949	Sporting & Athletic Goods	27	1	
3999	Manufacturers, N.E.C.	2		2
4911	Electric Co.s & Systems	4	1	
4922	Natural Gas Transmission	3		1

Individual Firms Interviewed		Total No. of Different Job Titles	Ability to Read Lips & Speak Required	Ability to Read Lips Required
SIC Code	Product			
5092	Petroleum Products	None		
5311	Dept. Store	26		2
5311	Dept. Store	12		
5341	Automatic Merchandising Machine Operator	6		3
5411	Grocery Store	1		
5812	Eating Places	2	1	1
7011	Hotels & Motels	8		7
7218	Industrial Launderers	12		11
7629	Electrical Repair Shops	1		1
8061	Hospitals	4		1
8061	Hospitals	6	1	2
9280	State Hospital	6		
9282	Education	None		
9290	Regular State Govt. Functions	9		
9290	Regular State Govt. Functions	3		
9290	Regular State Govt. Functions	6		
9290	Regular State Govt. Functions	18	4	
9390	Regular Local Govt. Functions	16	1	
9390	Regular Local Govt. Functions	4	1	

APPENDIX III

Deaf Employment in Oregon: Age by Sex

	MALE		FEMALE	
	No.	%	No.	%
24 & Under	17	8.80	6	6.31
25 - 34	68	35.23	32	33.68
35 - 44	48	24.87	33	34.73
45 - 54	60	31.08	23	24.21
55 - 64	0	-	1	1.05
65 & Over	0	-	0	-
TOTALS	193		95	

The proportion of female employed approximates that of the national figure for employed females in the general population; 33 percent as compared to 39 percent national figure.⁷

⁷Manpower Report of the President, January 1969.

Occupational Classification of Employed Deaf in Oregon by Age and Sex

Occupation	Under 25		25 - 34		35 - 44		45 - 54		55 - 64		65 & Over		Total
	M	F	M	F	M	F	M	F	M	F	M	F	
Professional, Technical, and Managerial (DOT O-1)	0	0	5	6	11	8	14	3					47
Clerical and Sales (2)	1	2	6	16	2	4	1	5	0	1			37
Service (3)	1	1	4	3	4	6	3	7					29
Farming, Forestry, and Fishing (4)			1	0									1
Processing (5)	2	0	1	2	2	3	5	1					16
Machine Trades (6)	2	0	25	1	14	0	12	0					54
Bench Work (7)	5	3	10	3	8	8	9	4					50
Structural Work (8)	4	0	10	0	4	0	8	0					26
Miscellaneous (9)	2	0	7	1	3	4	8	3					28
TOTAL	17	6	68	32	48	33	60	23	0	1			288
TOTAL, BOTH SEXES	23		100		81	83			1				288

APPENDIX IV

Revised Form Used in Deaf Survey

DEAF PROJECT

Plant Name _____ Address _____

SIC Code _____ Product or Service _____

Person Interviewed _____ Title _____

No. of Employees _____ Date of Contact _____ Interviewer _____

1. DOT Title _____ DOT Code _____

Plant Title _____ GED _____ SVP _____

2. Brief Definition of Duties:

3. Physical Demands:

Must be able to speak _____ Must be able to read lips _____
Deafness could be advantageous because of noise level _____

4. Comments:

1. DOT Title _____ DOT Code _____

Plant Title _____ GED _____ SVP _____

2. Brief Definition of Duties:

3. Physical Demands:

Must be able to speak _____ Must be able to read lips _____
Deafness could be advantageous because of noise level _____

4. Comments:

1. DOT Title _____ DOT Code _____

Plant Title _____ GED _____ SVP _____

2. Brief Definition of Duties:

3. Physical Demands:

Must be able to speak _____ Must be able to read lips _____
Deafness could be advantageous because of noise level _____

4. Comments:

EDUCATIONAL OPPORTUNITIES
FOR O.S.S.D. STUDENTS AND GRADUATES

by H.W. Barkuloo and Bruce McKinlay

The most profound change now occurring in the education of the deaf is the great increase in opportunities for deaf young people to prepare for careers. Historically there was Gallaudet College; now there are five regionally designated educational institutions with special programs for the deaf and four states have established programs.

GALLAUDET COLLEGE

There are five national post-secondary facilities for the education of deaf students. One of these, Gallaudet College in Washington, D.C., is the only college in the world serving an entirely deaf undergraduate population. It is primarily a liberal arts institution granting a Bachelor of Arts or Science degree. Admission is largely based on a two-day entrance examination consisting of some standardized tests and some tests (language oriented) designed by Gallaudet. Generally speaking, students with eighth-grade achievement levels have a good chance for acceptance particularly if their reading level is at or near the eighth grade. All other things being equal, students with ninth-grade achievement and above can expect to qualify.

While Gallaudet students enter into many careers, one of the main objectives of students entering the college has been that of becoming a teacher of deaf students. Despite having no education courses at Gallaudet, many of the deaf graduates have obtained teaching positions in schools for the deaf. Whether employment in this field will continue is doubtful as more trained teachers are available for employment.

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF

In recognition of the need for an educational facility to complement Gallaudet College, the National Technical Institute for the Deaf (N.T.I.D.) was organized in 1966. Associated with Rochester Institute of Technology (R.I.T.), N.T.I.D. was designed to provide the supportive services necessary

to allow qualified deaf students to compete with their hearing peers in two- and four-year degree programs in engineering, the sciences, and technical fields.

Unfortunately only about 10% of the enrolled deaf students have been able to successfully integrate into the regular R.I.T. programs. For this reason, N.T.I.D. has been forced to develop its own programs exclusively for deaf students. Although it is hoped that approval from R.I.T. will be served for more course offerings in the fall of 1970 only four programs are now available for deaf students who cannot enter the regular R.I.T. programs. These offerings include: architectural drafting, mechanical drafting, machine tool operation, and office practice and book-keeping.

Due to failure of the Congress to appropriate funds requested in the budgets of both President Johnson and President Nixon, N.T.I.D. has been unable to construct dormitory facilities and other needed buildings. This has caused N.T.I.D. to limit its enrollment to approximately 350, with 83 deaf students being accepted for the fall of 1970.

DELGADO COLLEGE, ST. PAUL TECHNICAL-VOCATIONAL INSTITUTE (T.V.I.),
SEATTLE COMMUNITY COLLEGE (S.C.C.)

At the time of the decision to establish N.T.I.D., concern was expressed because Gallaudet and N.T.I.D. were serving basically the same students and probably 80% to 85% of the students graduating from schools for the deaf had no opportunity for post secondary education (the average educational level for graduating deaf students nationally is around fifth grade). To provide opportunity for these students, the U.S. Office of Education and Social Rehabilitation Services awarded grants to three vocational-technical schools on a research and demonstration basis. In the fall of 1968, Delgado College began accepting deaf students and in the fall of 1969, programs began in St. Paul and Seattle. The focus of these three programs is not to duplicate the N.T.I.D. and Gallaudet efforts but rather to educate deaf students with less than eighth-grade educational levels. There is no educational floor for the students accepted, but experience at the three schools indicates that while limited opportunities are open to those deaf students with as low as third-grade educational levels, fourth grade achievement probably represents a practical lower level. As with N.T.I.D., the three vocational-technical

schools are funded to provide supportive services (interpreting, tutoring, counseling, notetaking) which will allow deaf students to successfully integrate with hearing students. Delgado College and S.C.C., in addition to the vocational-technical certificate programs, offer two-year associate degree programs in college or university liberal arts studies and in technical areas. T.V.I. is a component of the St. Paul Public Schools, and offers no college transfer courses. Enrollment in the three schools will be approximately 250 in the fall of 1970.

Deaf students at these three institutions are enrolled in the following areas:

DELGADO

Cooking and Baking
Mechanical Drafting
Architectural Drafting
General Business
Secretarial Studies
Accounting
Plumbing

Carpentry
Auto Mechanics
Air Conditioning & Heating
Electrical Engineering Technology
Painting & Decorating
Petroleum & Gas Engineering
Machinist

ST. PAUL TECHNICAL-VOCATIONAL INSTITUTE

Chemical Technology
Design Technology
General Office Practice
Traffic Transportation
Apparel Arts
Auto Body Repair

Graphic Arts
Machine Tool Processes
Production Art
Welding
Cosmetology
Medical Laboratory Assistant

SEATTLE COMMUNITY COLLEGE

Liberal Arts (leading to a 4-year degree)
Computer Programing (A.A. Degree)
Computer Operations
Key Punch
Architectural Drafting (A.A.)
Cosmetology (A.A.)
Welding

General Electronics
Digital Computer Electronics
Sheet Metal Fabrication
Automotive Mechanics
Dental Laboratory Technology (A.A.)
Accounting
Fashion Design

Machine Tool Operations

Carpentry

Horology

Industrial Electronics

Power Sewing

Diesel Mechanics

Food Services

Graphic Arts

OTHER PROGRAMS FOR THE DEAF

Four states have established programs for deaf students utilizing community colleges, generally oriented toward the vocational-technical fields. These states are Colorado, California, Texas, and Florida. Future planning by Federal officials anticipate three more federally funded schools similar to those in Seattle, St. Paul, and New Orleans. In addition, many colleges such as Chemeketa Community College, while not establishing specific programs for deaf students, have cooperated with local schools for the deaf in providing post-secondary opportunities for deaf persons.

Others, while willing to accept and work with deaf students, have had little experience with the deaf. Discussions with administrators in several Oregon Community Colleges reveal a general lack of knowledge of the educational capabilities of the deaf, but a great willingness to adapt to the special needs of students, including deaf students. Experience at Chemeketa Community College has demonstrated that special adjustments are necessary, but that school is highly interested in developing effective opportunities for deaf students to participate in the programs of the school. Both the regular, day programs, and the adult education programs at the Community Colleges are potential sources of post-secondary education for the deaf in Oregon.

The following table is probably not a totally complete listing, but it indicates the variety of programs offered by Oregon Community Colleges. It is extremely difficult to draw general conclusions about which particular program would be appropriate for deaf students. Such determinations require consideration of the individual student, the course content of the program, and the major instructor.

PROGRAMS IN OREGON COMMUNITY COLLEGES

ADMINISTRATION

- Blue Mountain Community College--Business Administration and General Studies
- Central Oregon Community College--Business Education; Business Technology
- Clackamas Community College--Business Administration and General Studies--Business; Business Education
- Clatsop Community College--Transfer Program in Business Administration; Business Management Curriculum; Business Administration
- Lane Community College--Business Administration and General Studies--Business; Middle Management
- Linn-Benton Community College--Business Administration Transfer Curriculum; Business Management Curriculum
- Mt. Hood Community College--Business Administration; Business Education; Mid-Management
- Portland Community College--Business Administration
- Southwestern Community College--Business Administration; Business Technology (Office Management Major)
- Treasure Valley Community College--Business Administration; Mid-Management; Office Management
- Umpqua Community College--Business Technology; Business Administration

GENERAL CLERICAL

- Blue Mountain Community College--General Office
- Central Oregon Community College--Secretarial Science; Secretarial Training
- Clackamas Community College--Secretarial Science
- Clatsop Community College--Secretarial Science
- Lane Community College--Secretarial Curriculum; Medical Office Assistant; Clerk/Typist; Secretarial; Secretarial Science
- Linn-Benton Community College--Office Occupations; Secretarial Science Transfer Curriculum; Secretarial; Office Administration Curriculum
- Mt. Hood Community College--Secretarial Science
- Portland Community College--Clerical Training; Office, General; Multi-Clerical; Office Machines; Office Procedures; Secretarial; Touch Shorthand; Secretarial Science; Medical Secretary; Legal Secretary

Salem Technical-Vocational Community College--Clerk Stenographer;
General Business
Treasure Valley Community College--Secretarial Science
Umpqua Community College--Secretarial Technology

BOOKKEEPING AND ACCOUNTING

Blue Mountain Community College--Business; Accounting and Business
Central Oregon Community College--Data Processing
Clackamas Community College--Bookkeeping/Clerical
Lane Community College--Accounting/Clerical; Key Punch; Data
Processing
Linn-Benton Community College--Bookkeeping--Clerical Curriculum;
Data Processing Curriculum
Mt. Hood Community College--Accounting
Portland Community College--Bookkeeping and Accounting; Data Pro-
cessing
Salem Technical-Vocational Community College--Data Processing
Technology
Southwestern Community College--Bookkeeping--Clerical; Data Pro-
cessing; Business Technology (Accounting Major)

AGRICULTURE AND FORESTRY

Blue Mountain Community College--Agriculture; Pre-Forestry
Central Oregon Community College--Forestry; Forestry Technology
Clackamas Community College--Agriculture; Forestry
Clatsop Community College--Agriculture; Forestry Technology; Live-
stock Technology, Marine Technology
Lane Community College--Agriculture; Forestry Technician Cur-
riculum
Linn-Benton Community College--Agriculture Services Technology
Curriculum; Agriculture Transfer Curriculum; Forestry Trans-
fer Curriculum
Mt. Hood Community College--Transfer Curricula--Agriculture;
Forestry
Salem Vocational-Technical Community College--Forest Technology;
Forest Products Technology
Treasure Valley Community College--Agriculture; Forestry; Agri-
culture Mechanics
Umpqua Community College--Agriculture; Forestry

FOOD PRODUCTION

Mt. Hood Community College--Food Processing Technology

TIMBER PRODUCTS

Southwestern Community College--Wood Industries Technology

CONSTRUCTION

Lane Community College--Construction Division; Building Materials Management

Southwestern Community College--Construction Trades; Civil-Structural Technology

METAL WORKING

Clackamas Community College--Machine Technology; Welding Technology

Lane Community College--Machine Shop Curriculum; Welding Technology

Linn-Benton Community College--Welding

Portland Community College--Metallurgy; Welding Technology

Salem Technical-Vocational Community College--Welding and Fabrication; Machine Shop

Southwestern Community College--Metal - Mechanical Department

Treasure Valley Community College--Welding Technology

Umpqua Community College--Welding

ELECTRONICS - ELECTRICITY

Clackamas Community College--Electronic-Mechanic Technology

Clatsop Community College--Electronic Technology

Lane Community College--Electronic Engineering Technician; Radio and Television Services; Electronics Technology (Communications)

Portland Community College--Electronics Technology; Radio, T.V.

Mt. Hood Community College--Electronic Mechanic

Southwestern Community College--Electrical-Electronics Technology

TRANSPORTATION

Blue Mountain Community College--Air Transportation Technology;
Air Traffic Control
Lane Community College--Flight Technology
Mt. Hood Community College--Aviation Technology
Portland Community College--Transportation Communications;
Transportation Management
Southwestern Community College--Aviation
Treasure Valley Community College--Aviation--Commercial Pilot

SALES

Clackamas Community College--Merchandising
Lane Community College--Sales and Marketing
Mt. Hood Community College--Salesmanship
Portland Community College--Merchandising; Cashiering and Checking
Southwestern Community College--Business Technology (Distribution
Major)

FOOD SERVICE

Lane Community College--Food Technology
Portland Community College--Quantity Food Preparation

HEALTH SERVICES

Blue Mountain Community College--Pre-Medical Technology; Pre-
Pharmacy
Central Oregon Community College--Medicine; Microbiology and
Hygiene; Pre-Nursing
Clackamas Community College--Dentistry; Medicine; Nursing;
Pharmacy
Lane Community College--Health Occupational Courses; Physical
Education Courses; Inhalation Therapy; College Transfer
Courses; Pre-Pharmacy; Dentistry; Medical Technology; Medicine;
Nursing; Practical Nursing; Dental Assistant; Dental Hygiene
Linn-Benton Community College--Health Occupations; Nursing As-
sistants, Orderlies, and Aides; Personal Health

Portland Community College--Dental Assistant; Dental Technician;
 Practical Nurse; Dental Hygienist; Associate Degree Nurse
 Salem Technical-Vocational Community College--Nursing Program;
 Dental Assistant; Medical Assistant; Practical Nursing
 Southwestern Community College--Practical Nursing
 Treasure Valley Community College--Dentistry; Medicine; Nursing;
 Pharmacy
 Umpqua Community College--Dentistry; Medicine; Nursing; Pharmacy

EDUCATION AND SOCIAL SERVICES

Blue Mountain Community College--Community Service and Public
 Affairs; Education, Elementary; Education, Secondary; General
 Social Science; Sociology
 Central Oregon Community College--Elementary Teacher Education;
 Secondary Teacher Education
 Clackamas Community College--Education (Elementary); Education
 (Secondary); Law
 Lane Community College--Child Care Services; Elementary Education
 Secondary Education; Law, Professional
 Portland Community College--Social Science
 Treasure Valley Community College--Elementary Education; Law;
 Secondary Education
 Umpqua Community College--Educational (Elementary); Education
 (Secondary); Law

PROTECTIVE SERVICES

Blue Mountain Community College--Pre-Law; Law-Enforcement
 Clackamas Community College--Law Enforcement; Fire Protection
 Clatsop Community College--Law Enforcement
 Lane Community College--Law Enforcement; Fire Prevention Technology
 Linn-Benton Community College--Fire Science; Law Enforcement;
 Law Transfer
 Mt. Hood Community College--Law Enforcement
 Portland Community College--Fire Protection Technology; Law
 Enforcement
 Salem Technical-Vocational Community College--Fire Protection;
 Law Enforcement
 Southwestern Community College--Law Enforcement Program

Treasure Valley Community College--Law Enforcement

Umpqua Community College--Law Enforcement; Fire Science

APPLIED TECHNOLOGY: ENGINEERING AND DESIGN

Blue Mountain Community College--Engineering; Architecture

Clackamas Community College--Architecture and Interior Architecture; Engineering; Landscape Architecture; Drafting Technology

Clatsop Community College--Transfer Program in Architecture, Interior Architecture and Landscape Architecture; Engineering; Civil Engineering Technology; Civil Engineering Drafting

Lane Community College--Electronics; Civil and Structural Engineering Technology; Engineering; Technical Drafting; Architecture, Interior Architecture and Landscape Architecture

Linn-Benton Community College--Engineering Transfer Curricula; Architecture Transfer Curricula; Drafting Technology

Mt. Hood Community College--Architecture, Interior Architecture and Landscape Architecture; Engineering; Civil Engineering

Portland Community College--Engineering Technology and Trade Preparation; Drafting Technology

Salem Technical-Vocational Community College--Civil and Structural Technology; Electronic Engineering Technology; Mechanical Engineering Technology; Mechanical Drafting; Technical Drafting

Treasure Valley Community College--Architecture; Engineering; Landscaping and Public Grounds Maintenance; Drafting Technology

Umpqua Community College--Architecture and Interior Architecture; Engineering; Landscape Architecture; Civil-Structural Engineering Technology; Drafting Technology

APPLIED TECHNOLOGY: LABORATORY OCCUPATIONS

Blue Mountain Community College--Pre-Medical Technology

Clackamas Community College--Medical Technology

Linn-Benton Community College--Pharmacy Transfer

Portland Community College--X-Ray Technology; Certified Laboratory Assistant

Umpqua Community College--Medical Technology

MECHANICAL

Blue Mountain Community College--Mechanical Technology
Clackamas Community College--Auto Body and Fender; Auto Mechanics
Clatsop Community College--Industrial-Mechanics
Lane Community College--Mechanics; Domestic Refrigeration Service;
Home Appliance Service; Agricultural and Industrial Equipment
Technology; Airframe and Power Plant Mechanics; Auto Body and
Fender/Auto Painting; Automotive and Diesel Technology
Linn-Benton Community College--Industrial Mechanics; Auto Mechanics
Mt. Hood Community College--Auto Mechanics; Aviation Technology
Portland Community College--Airframe and Power Plant Mechanics;
Automotive
Southwestern Community College--Metal-Mechanical; Industrial
Mechanics

BUILDING MAINTENANCE

Lane Community College--Industrial Technology; Custodial Main-
tenance and Repair

FEDERAL FUNDING FOR CAREER EDUCATION PROGRAMS

O.S.S.D. is eligible for federal vocational education funds, which are administered through the Oregon Board of Education. There are two sources, regular vocational education funds, and funds especially earmarked for the disadvantaged and the handicapped.

Specific requirements for eligibility for these funds are set forth in the "State Plan for the Administration of Vocational Education." These include requirements as to staff certification, which are not now met by all O.S.S.D. instructors, and requirements as to instructional content, counseling facilities, youth organizations, and evaluation. (See attached "Application for Approval of Secondary Vocational Programs--Form No. VE-66 (70).")

The funds available through the Oregon Board of Education are principally to be used as seed money to stimulate extension and improvement of vocational education, but not to finance on-going programs. Funds are generally not used for strictly exploratory programs, although exemplary or demonstration programs might be funded on a one-year basis.

OREGON BOARD OF EDUCATION
942 Lancaster Drive, NE

Form No. VE-66(70)
Division of Community Colleges
and Career Education

APPLICATION FOR APPROVAL OF SECONDARY VOCATIONAL PROGRAMS

Date _____

School _____ Dist. No. _____

Address _____ City _____ County _____

VOCATIONAL PROGRAM

Please identify the vocational curriculums for which program approval is being requested by checking the appropriate boxes.

Cluster Curriculum

Other Vocational Programs

Agriculture ☐

Diversified Occupations ☐

Clerical ☐

Other ☐

Stenographic ☐

Other ☐

Bookkeeping & Accounting ☐

Other ☐

Mechanical ☐

Other ☐

Metals ☐

Other ☐

Construction ☐

Electrical ☐

Marketing ☐

Food Service ☐

Health ☐

Certification

I do hereby certify that the assurances as outlined in Provisions for Approval of Secondary Vocational Programs will be complied with and the vocational programs approved will be conducted in accordance with the Acts, Regulations and State Plan for Vocational Education.

Superintendent of School District

Date

Please sign and return the first page (one copy) of this Form VE-66(70).

OREGON BOARD OF EDUCATION
942 Lancaster Drive, NE
Salem, Oregon 97310

(Applies to) Form VE-66(70)
Division of Community Colleges
and Career Education

PROVISIONS FOR APPROVAL OF SECONDARY VOCATIONAL PROGRAMS

SECTION I: STATEMENT OF ASSURANCES

This section provides a series of statements designed to indicate that the district's program of vocational education meets the provisions of the rules and regulations governing the use of P.L. 88-210 funds.

Objectives of Instruction

- The program of instruction will be available for all persons of secondary school age or older, including those who have academic, socio-economic, cultural, physical, or other handicaps, who need or can profit from occupational education.
- Vocational education will be designed to prepare individuals for gainful employment or advancement in any recognized occupation except those which are generally considered to be professional or as requiring a baccalaureate or higher degree.

Content of Instruction

- The program of vocational instruction will be based on a consideration of the most up-to-date skills, knowledges, and understandings required in the cluster of occupations for which it is being provided. Programs will include planned, logical sequences of those essentials of education and experiences deemed necessary for individual students to meet their occupational objectives.
- The vocational curriculums are based on the advice and counsel of representatives from the occupational areas being served.
- There is reasonable expectation of employment opportunities in the occupational cluster as verified by advisory committees, the Oregon State Employment Service, or other sources.
- All students receiving vocational instruction in occupational preparation programs will have a career goal. This goal may be either a specific occupation or a cluster of closely related occupations in an occupational field.
- The program of instruction will be sufficiently extensive in duration and intensive within a scheduled unit of time to enable the individual to develop the competency necessary to fit him for entry level employment in the occupational cluster for which he is being trained or to prepare for advanced training.
- The program of instruction will combine and coordinate related instruction with field, shop, laboratory, cooperative work, and other occupational experience which is appropriate to the vocational objective of the individual, which is of sufficient duration to develop the competencies needed to fit him for employment in the occupation or occupational cluster for which he is being trained, and which is supervised, directed, or coordinated by a person qualified under the provisions of the State Plan for Vocational Education.

Use of Funds

- All vocational instruction will be under the supervision and control of a local educational agency responsible for expenditure of public school funds.
- Federal funds made available will be used to supplement the amount of local funds available, and in no case supplant local funds.
- Federal funds received will not be used for any programs of vocational education which cannot be demonstrated to (a) prepare students for employment, (b) be of significant assistance in making an informed and meaningful occupational choice to individuals enrolled, or (c) prepare students for advanced training.

Vocational Guidance and Counseling

- Vocational guidance, including effective selection, placement, and follow-up of all students who finish or drop a curriculum, is a continuing part of the program.

Teachers and Supervisors

- The program of instruction will be conducted and supervised by qualified teachers and supervisors meeting the qualifications stipulated in Sections 1.32, 1.33 and 1.34 of the State Plan for the Administration of Vocational Education.

Adequate Facilities and Materials

- Classrooms, libraries, shops, laboratories, and other facilities (including instructional equipment, supplies, teaching aids, and other material) will be adequate in supply and quality to enable those who are to be trained to meet the occupational objectives for which the education is intended. Class enrollment shall be limited to the number of students that insures effective instruction and safe working conditions.

Vocational Youth Organizations

- Provision will be made for vocational education youth organizations where appropriate. Vocational education youth group activities are an integral part of the instructional program and will be supervised by persons who are qualified as vocational education teachers or supervisors.

Evaluation

- A system for evaluating shall be developed to determine how the program meets its stated objectives. This system shall be ongoing and provide for modification resulting from appraisal from students, employers, and the advisory committee. Evaluation statements shall be specific and must include suggestions for improvement directly related to recommendations of local advisory committees.

SECTION II: VOCATIONAL CURRICULUM ASSURANCES

(Part A)

This part of Section II provides statements applicable to all vocational curriculums indicating that the district's vocational program meets the following minimum standards in addition to the assurances identified in Section I.

- Advisory committee meeting minutes and membership rosters are on file at the local educational agency for each vocational program.
- The educational agency will initiate and negotiate appropriate written contracts or agreements with all community resources used for student occupational experience.
- Adequate provisions will be made for the following activities and expenditures when appropriate:
 - a. Supervision time and travel budget for personnel responsible for supervised occupational experience programs.
 - b. Travel for instructor(s) engaged in official activities connected with vocational youth organizations.
 - c. Travel expenses for instructor(s) to attend annual State-called conferences, inservice workshops, and other appropriate meetings.
 - d. Adequate instructor time allotted for program development and evaluation.
- Provisions will be made for vocational curriculums to provide a minimum of ten instructional hours per week or for two credit units or its equivalent.
Equivalent means: Five instructional hours per week or one credit unit, plus one hour or unit approved related vocational course, or supervised cooperative work experience or other occupational experience.
- Provisions shall be made for the articulation and coordination of occupational preparatory programs from secondary to post-secondary vocational-technical programs.

(Part B) Special Program Assurances

This part of Section II provides special statements for certain curriculums indicating that the district's vocational curriculum meets the minimum standards specified.

Agriculture Cluster

- Provisions will be made for a 9th and/or 10th grade instructional program in agriculture in addition to the 11th and 12th grade cluster.
- Provisions will be made for supervised occupational experience in agriculture.
- Provisions will be made for supervision of students in agriculture occupational experience programs on a 12-month basis by a qualified agriculture instructor.
- Provisions will be made for the FFA to be an integral part of the instructional program and for a qualified agriculture instructor to serve as chapter advisor.

Health Occupations Cluster

- The curriculum reflects consideration of State and national program standards, certification requirements, and licensure laws relating to a large number of occupations within the health field.
- Actual or "live lab" experiences in clinical and/or community facilities will be an integral part of a regular instructional program and will be planned, coordinated, and supervised by qualified health occupations education personnel.

Marketing Cluster - Distributive Education

- Provision should be made for DECA to be an integral part of the instructional program and for a qualified distributive education instructor to serve as chapter advisor.
- Provisions will be made for cooperative work experience to be an integral part of a one-year program and an integral part of the second year of a two-year program. The project method may be utilized in lieu of or in conjunction with cooperative work experience if cooperative work experience opportunities are limited by community resources, or if it is advisable to meet specialized student needs.
- Provision will be made for adequate supervision of students in cooperative work experience programs and/or working on special projects in lieu of or in conjunction with cooperative work experience programs.

Mechanical, Metals, Construction, and Electrical Clusters

- Provisions should be made for VICA to be an integral part of the instructional program.

Office Occupations Clusters: Bookkeeping and Accounting, Clerical, and Secretarial

- The program of instruction will enable students to be identified according to one of the following occupational cluster areas: bookkeeping and accounting; clerical; secretarial.
- The following are examples of courses that will be considered as vocational in intent in each of the clusters:

Bookkeeping and Accounting

Bookkeeping (second year)
Introduction to Data Processing
Office Machines
Business Communications
Business Mathematics
Cooperative Work Experience

General Clerical

Office Practice or Procedures
Office Machines
Introduction to Data Processing
Cooperative Work Experience
Typewriting (second year)

Steno-Secretarial

Shorthand I and II (two years)
Office Practice or Procedures
Typewriting (second year)
Cooperative Work Experience
Business Communications

Gainful Homemaking Programs

- The program of instruction will enable students to be identified in one of the following occupational areas:

Child Care Services

Clothing Management, Production and Services

Institution and Home Management and Supporting Services.

- Provisions should be made for FHA to be an integral part of the instructional program.

NOTE: All Consumer and Homemaking Programs (formerly Useful Homemaking) will be applied for under Part F - funding on Form VE-95(70).

SUMMARY REGARDING POST HIGH SCHOOL EDUCATION
OF THE DEAF - 1956-57 to 1969-70

by Carl A. Haugerud

The information contained in the following tables includes graduates of the Oregon State School for the Deaf who enrolled in a post high school education program and graduates of the public schools who enrolled and received State grant-in-aid assistance for post high school education. It was summarized from information received from the Superintendent's office, School for the Deaf, and the Vocational Rehabilitation Division's Counselor assigned to the school.

GROUP I

Deaf students who enrolled in a post high school education program from 1956-57 through 1965-66.

Use of the above years, 1956-57 through 1965-66, would give all students sufficient time to complete a five-year program.

A. Number who enrolled in a post high school program:

	<u>Male</u>	<u>Female</u>	<u>Total</u>
School for the Deaf	10	10	20
Public School	2	2	4
Total Students	12	12	24

At the School for the Deaf, a total of sixty-six students graduated from the school during the 10 years 1955-56 through 1964-65. The twenty graduates who entered a post high school program represented 30.3% of those who graduated.

B. Schools in which students enrolled:

Gallaudet	23
Linfield	1
Total	24

C. Experience of students in completing program:

(1) Number who graduated:

	<u>Male</u>	<u>Female</u>	<u>Total</u>
School for the Deaf	1	4	5
Public School	2	0	2
Total	3	4	7

For the School for the Deaf, 7.5% of students who graduated during the 10 year period 1955-56 to 1964-65 successfully completed a post high school education program; 25% of the graduates who entered a post high school program successfully completed a program.

(2) Number who terminated prior to completion of program:

	<u>Male</u>	<u>Female</u>	<u>Total</u>
School for the Deaf	8	5	13
Public School	0	2	2
Total	8	7	15

(3) Number unknown if graduated or terminated because of moving from Oregon:

2

(4) Total

24

(5) Reasons for not completing program:

	<u>Male</u>	<u>Female</u>	<u>Total</u>
Dismissed-academic	7	3	10
Withdrew	1	2	3
Married		1	1
Unknown		1	1
Total	8	7	15

GROUP II

Deaf students who enrolled in a post high school education program from 1966-67 through 1969-70.

A. Number who enrolled in a post high school program:

	<u>Male</u>	<u>Female</u>	<u>Total</u>
School for the Deaf	24	7	31
Public School	6	9	15
Total	30	16	46

At the School for the Deaf, 58 students graduated during the 4 years 1965-66 through 1968-69. The 31 graduates who entered a post high school education program represents 53.4% of the total number of graduates.

B. Last school in which students were enrolled (many students enrolled in more than one school):

Gallaudet	18
N.T.I.D.	5
Seattle Community College	8
Ricks College	1
Delgado	2
Portland Community College	3
Utah State College	5
Portland State College	1
Atlantic Union	1
Oregon State University	1
Marylhurst	1
	46

C. Experience of students in maintaining satisfactory progress:

(1) Number of students still enrolled:

	<u>Male</u>	<u>Female</u>	<u>Total</u>
School for the Deaf	18	3	21
Public School	3	6	9
Total	21	9	30

For the School for the Deaf, 36.2% of the 58 students who graduated from 1965-66 through 1968-69 continued to be enrolled at the end of the 1969-70 academic year in a post high school program; 67.7% of the 31 graduates who entered a post high school education program continued to be enrolled at the close of the 1969-70 academic year.

(2) Number of students who have terminated their program:

	<u>Male</u>	<u>Female</u>	<u>Total</u>
School for the Deaf	6	4	10
Public School	3	3	6
Total	9	7	16
GRAND TOTAL			<u><u>46</u></u>

For the School for the Deaf, the significant improvement in the number of graduates represented in Group II who entered a post high school education program and the high percentage who continued to be enrolled may reflect in part: (a) the provision of a full high school program at the School for the Deaf beginning with the 1963-64 school year, (b) the increased number of post high school education programs available to the deaf offering a greater variety of curricula to meet individual needs, and (c) the increased state resources being allocated to support the cost of post high school education for the deaf.

A REVIEW OF THE EMPLOYMENT SUCCESS OF RECENT GRADUATES
OF THE OREGON STATE SCHOOL FOR THE DEAF

by Michael E. Kutter

INTRODUCTION

The purpose of this paper is to briefly review the employment experiences of recent graduates of the Oregon State School for the Deaf. It is proposed that such an examination can be used as one criterion in assessing the current educational and training program at the Oregon State School for the Deaf, and possibly aid in the formulation of recommendations concerning these programs. It was decided to analyze the labor market experiences of the students who left O.S.S.D. during 1967, 1968, and 1969. Client information data on these graduates was made available by Mrs. Lois Tollefson, Counselor, State of Oregon Vocational Rehabilitation Division and a member of the Vocational Training Needs Study Advisory Committee. Mrs. Tollefson is assigned by the Vocational Rehabilitation Division to work with students and graduates of the Oregon State School for the Deaf. The data available through Mrs. Tollefson was not comprehensive; her files do not include information on all graduates, nor was it the result of a special point in time survey. However, nearly every 1967, 1968, and 1969 graduate was included in the 45 persons for which data was available. The data was compiled by Mrs. Tollefson from client information records. Information that was of particular interest to this paper included year of graduation from O.S.S.D., whether the person primarily pursued a vocational or academic program at O.S.S.D., and the person's employment status: occupation, student, or unemployed. The data made available was adequate for the purpose of this review and saved the expense, in time and money, of doing a special survey.

O.S.S.D. GRADUATES AND POST-SECONDARY EDUCATION

Approximately thirty percent (30%) of the graduates for whom information was available continued their education after leaving O.S.S.D.

These graduates have entered a number of post-secondary schools. However, it is interesting to note that approximately 4 out of 10 of these students are enrolled at institutions which, until recently, would not have been particularly adapted to educating deaf persons. Seattle Community College and Delgado College in New Orleans recently began to offer special ancillary services aimed at allowing the deaf an opportunity to participate in regular college programs alongside their hearing counterparts. Chemeketa Community College in Salem, represented on the Vocational Training Needs Study Advisory Committee by Mr. Al Leach, has evidenced a special interest in integrating deaf persons into the educational programs offered at the college.

TABLE I
O.S.S.D. GRADUATES* IN
POST SECONDARY EDUCATION

EDUCATIONAL INSTITUTION	NUMBER OF STUDENTS
Gallaudet College	5
National Technical Institute for the Deaf	4
Seattle Community College	4
Delgado (New Orleans)	2
Salem Community College	1
Utah State University	1
TOTAL	17

*Note: Graduates from O.S.S.D. in 1967, 1968, and 1969.

The availability of these educational programs may have a significant impact on the labor market experiences of future O.S.S.D. graduates. Because of the limited enrollments of Gallaudet College and the National Technical Institute for the Deaf, many high school graduates have been denied the advantage of post-secondary education.

O.S.S.D. GRADUATES AND DIRECT EMPLOYMENT

Most O.S.S.D. graduates have not continued their formal education after completing studies at O.S.S.D. These graduates have gone directly into the labor market.

Recent graduates are employed in numerous occupations. Only two occupations, keypunch operator and electronics assembler, had more than one person employed in them. The keypunch instruction received by graduates while they were attending O.S.S.D. apparently has equipped them to compete well in this occupation. The large number of persons found working in electronics assembly seems to stem from the willingness of employers in the Electronics industry, particularly Tektronix, to employ deaf persons.

TABLE II
OCCUPATIONS OF
RECENT O.S.S.D. GRADUATES*

D.O.T. CODE	OCCUPATION	NUMBER OF PERSONS
017.281	Draftsman	1
213.582	Key Punch Operator	9
361.687	Clothes Sorter	1
381.887	Janitor	1
406.887	Nursery Worker	1
407.884	Grounds Keeper	1
523.887	Freezer Laborer	1
526.781	Baker	1
603.782	Buffing Machine Operator	1
667.782	Sawmill Worker	1
669.886	Greenchainman	1
726.781	Electronics Assembler	4
750.884	Tire Mfg. Worker	1
762.884	Door Assembler	1

806.781	Trailer Mfg. Worker	1
807.381	Auto Body & Fender Man	1
TOTAL		27

*Note: Graduates from O.S.S.D. in 1967, 1968, and 1969.

While the data on occupations do not indicate any occupational area in which deafness is a particular advantage, it does point up noteworthy absences from certain occupations. Remembering that the data is for recent graduates calls attention to the lack of deaf persons employed in many of the occupations traditionally associated with recent high school graduates. Thus it is interesting to observe that not a single recent graduate was found working as a bookkeeping clerk, cashier, typist, stenographer, secretary, receptionist, telephone operator, teller, sales clerk, waitress, automobile service station attendant, box boy, fry cook, nurses aide, bus boy, or stock clerk. The total absence of recent O.S.S.D. graduates in the above occupations is in all probability mainly due to a real or supposed communications problem associated with these occupations by the recent graduates and/or potential employers. The significance of this is that many of the occupations which usually supply the greatest employment opportunities for recent high school graduates are in a very real sense closed to recent O.S.S.D. graduates. Some of the occupations, such as telephone operator, will undoubtedly remain forever closed to deaf persons. Other of these occupations, such as stenographer, might provide employment opportunities for deaf persons if employers and/or the deaf population could reorient their thinking concerning the employment of deaf persons in these occupations.

In addition to the above occupational differences with a comparable recent hearing high school graduate population, a second deviation worthy of mention is the fact that none of the recent graduates was in the armed forces. Many hearing high school graduates, particularly young men, use their military service as a means to secure post-secondary vocational training and as a period to make a career choice.

The restriction of employment opportunities and the lack of military training place additional responsibilities upon the O.S.S.D. to

provide graduates not continuing vocational training, with sufficient vocational preparation to find suitable employment. The recent O.S.S.D. graduate enters the labor market at a marked disadvantage.

GRADUATES OF VOCATIONAL AND ACADEMIC PROGRAMS AT O.S.S.D.

As would be expected, graduates of the academic program often enroll in post-secondary educational institutions. Slightly over sixty percent of the academic program graduates continued their education.

TABLE III
GRADUATES* OF THE VOCATIONAL PROGRAM
AT O.S.S.D.

D.O.T. CODE	OCCUPATION	NUMBER OF PERSONS
017.281	Draftsman	1
213.582	Key Punch Operator	3
361.687	Clothes Sorter	1
381.887	Janitor	1
406.887	Nursery Worker	1
407.884	Grounds Keeper	1
523.887	Freezer Laborer	1
526.781	Baker	1
603.782	Buffing Machine Operator	1
667.782	Sawmill Worker	1
726.781	Electronics Assembler	2
762.884	Door Assembler	1
806.781	Trailer Mfg. Worker	1
807.381	Auto Body & Fender Man	1
TOTAL		18

*Note: Graduates of O.S.S.D. in 1967, 1968, and 1969.

On the other hand, all of the graduates of the vocational program went directly from high school into the labor market. These vocational program graduates coupled with the academic program graduates not pursuing post-secondary studies total over seventy-three percent of the graduates of O.S.S.D. for which information was available.

TABLE IV
GRADUATES* OF THE ACADEMIC PROGRAM
AT O.S.S.D.

D.O.T. CODE	OCCUPATION	NUMBER OF PERSONS
213.582	Key Punch Operator	6
726.781	Electronics Assembler	3
750.884	Tire Mfg. Worker	1
	Student	17
TOTAL		27

*Note: Graduates of O.S.S.D. in 1967, 1968, and 1969.

CONCLUSIONS

Educational and vocational schools, manpower programs, and rehabilitation centers are charged with assisting individual students or clients to gain an adequate working knowledge of themselves and their society. The degree to which former students or clients are able to cope with their society, without the continued intervention of the institution, is indicative of the success of the institution in meeting this basic goal. This paper is not intended to measure O.S.S.D.'s success using the above criteria. However, certain conclusions can be built around this framework.

1. Most graduates of O.S.S.D. have gained employment or continued their education.
2. Many graduates of O.S.S.D. are not equipped to go directly into the labor market and secure suitable employment. However, these graduates are often placed on jobs through the Oregon Division of Vocational Rehabilitation and the Oregon State Employment Service. Ties with these organizations and O.S.S.D. should be strengthened to enhance the successful job placement of O.S.S.D. graduates.
3. Increased efforts should be made on the part of O.S.S.D. to expose deaf students to the world of work and vocational choice. The current work exploration class and the recent work experience program should be strengthened and expanded.
4. The probability that increasing numbers of future O.S.S.D. graduates will pursue post-secondary studies due to the increased opportunities should cause the Advisory Committee to consider what emphasis should be placed on terminal vocational studies at O.S.S.D. Related to this is the question of how O.S.S.D. can prepare these students to be successful in their post-secondary studies.
5. Better data must be readily available to evaluate the success of O.S.S.D. graduates in coping with the non-institutionalized world. In an effort to meet this deficiency systemic follow-up studies should be conducted on O.S.S.D. graduates. These studies should become a regular part of O.S.S.D.'s evaluation and planning process.
6. An understanding of prevailing employment patterns for recent deaf high school graduates should cause persons dealing with deaf persons (O.S.S.D. staff, counselors, and employment specialists) and students to consider occupational alternatives to traditional entry occupations for recent high school graduates.
7. The lack of military service for deaf persons can deny them the benefit of occupational training and work experience.
8. The large percentage (73%) of O.S.S.D. graduates that enter the labor market directly after graduation from high school should cause increased efforts to equip these graduates to gain adequate employment.

9. There seems to be little correlation, with the exception of key punch instruction, between the vocational instruction offered at O.S.S.D. and the employment experiences of recent graduates. However, it should be noted that most vocational program graduates pursued a generalized program and did not specialize in one occupation while attending O.S.S.D.

Finally, it should be remembered that the successful integration of the O.S.S.D. graduate is not the sole responsibility of the School. Greater emphasis and involvement of students, student families, state and private agencies, the business community, and the adult deaf community is necessary to ensure proper employment opportunities.